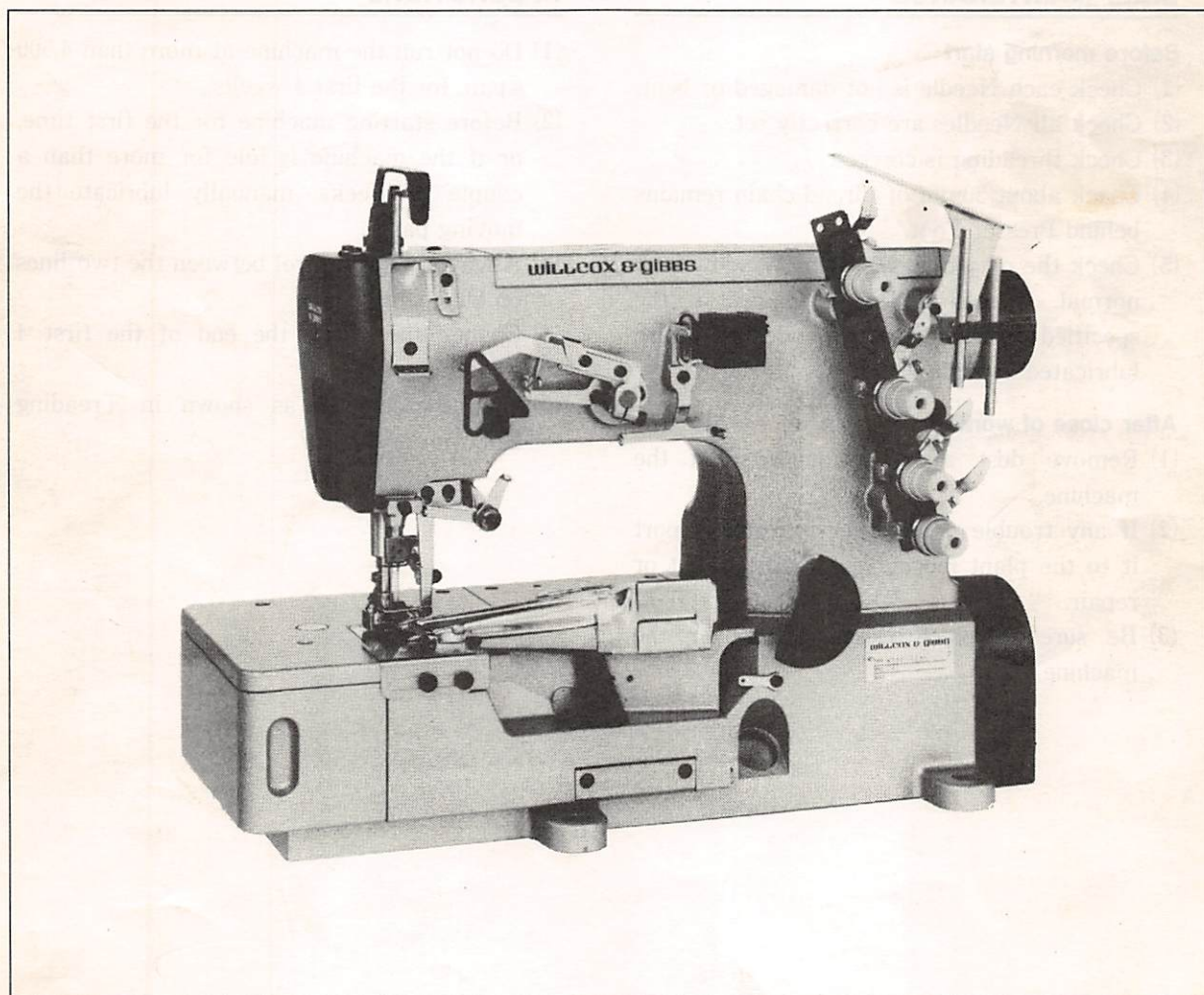


W562·W542

FLATBED INTERLOCK STITCH MACHINES

First edition; issued in March, 1984



WILLCOX & GIBBS

INTRODUCTION

This booklet contains some notes on the operation and maintenance of the W500, which should be useful to you and should help you to become familiar with the machine and to derive the best use from it.

DAILY MAINTENANCE

Before morning start

- (1) Check each Needle is not damaged or bent.
- (2) Check all Needles are correctly set.
- (3) Check threading is correct.
- (4) Check about 30mm of thread chain remains behind Presser Foot.
- (5) Check the oil jets in Oil Sight Window are normal. Check oil is maintained at the specified level and the hand-oiled parts are lubricated enough.

After close of work

- (1) Remove dust and lint deposits on the machine.
- (2) If any trouble or disorder is found, report it to the plant mechanic for adjustment or repair.
- (3) Be sure to place Dust Cover over the machine.

FOR SAFETY

- (1) Make sure Belt Cover is properly fitted.
- (2) Take care when you connect Power Cord to Machine Motor as well as when you check the machine before switching on.
- (3) Turn off Motor Switch whenever you leave the work table.
- (4) Turn off Motor Switch in the event of power failure.
- (5) Make sure Motor has completely stopped when you clean or inspect the machine.
- (6) Be sure to turn off the power and make sure Motor has completely stopped when you thread the machine or replace the needles.

PRECAUTIONS

- (1) Do not run the machine at more than 4,500 s.p.m. for the first 4 weeks.
- (2) Before starting machine for the first time, or if the machine is idle for more than a couple of weeks, manually lubricate the moving parts.
- (3) Always keep oil level between the two lines on Oil Sight Gauge.
- (4) Change the oil at the end of the first 4 weeks.
- (5) Thread correctly as shown in Treading Diagram on Page 7.

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Fig.1

Note:

- For a machine equipped with the under fabric trimmer (the FT device), cut the portion ①.
- For a machine equipped with the needle positioner, cut the portion ②.

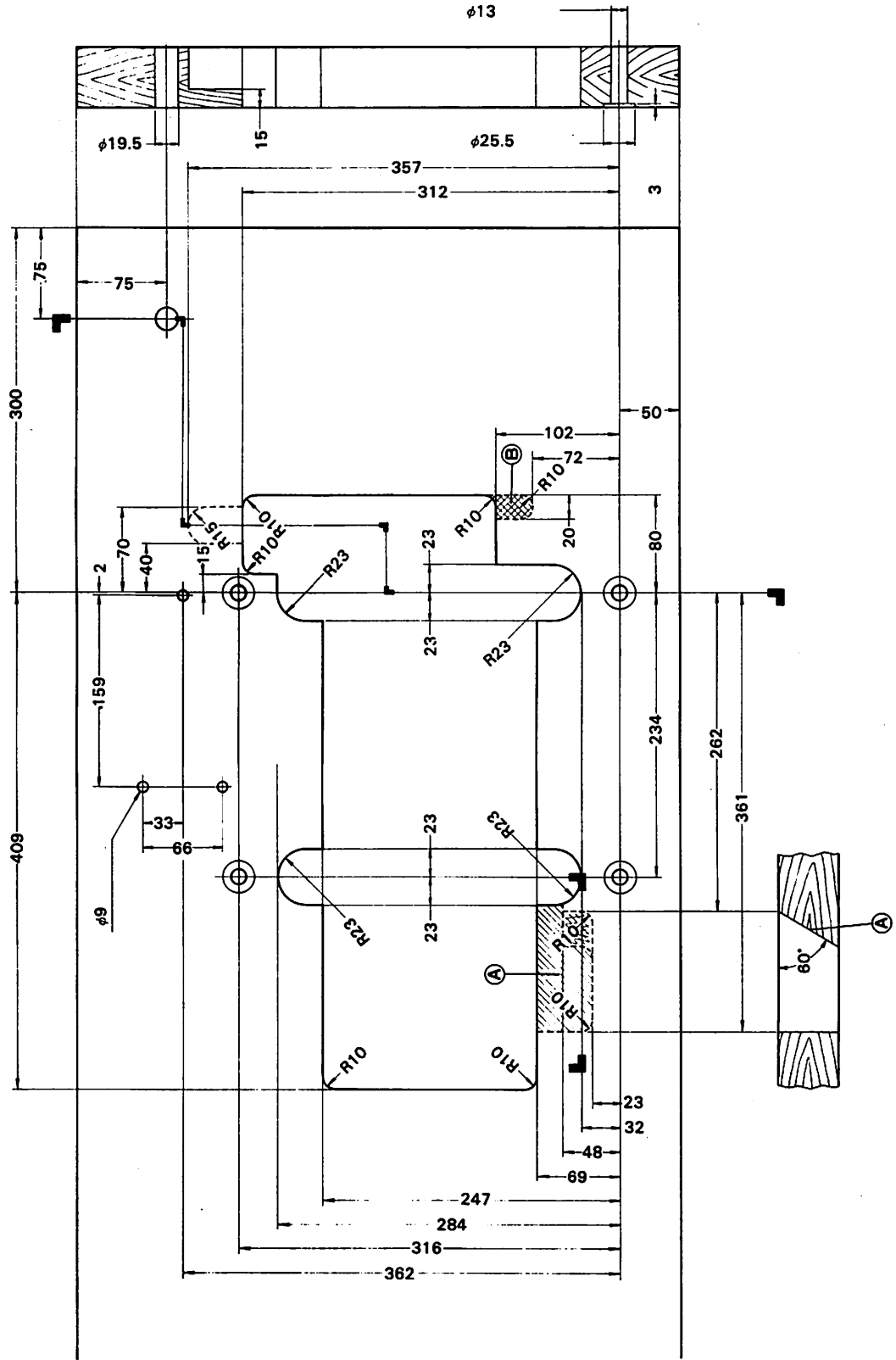


TABLE CUT-OUT AND INSTALLATION BRACKET

The semi-submerged installation is standard for this machine.

Cut out the table and install the machine in the following manner.

- (1) Refer to Fig.1 and cut out the table as specified.
- (2) Refer to Fig.2 and set ❶ ~ ❸ in sequence.
If the machine is equipped with the under fabric trimmer, refer to Fig.3 and set ❹ ~ ❺ in sequence.

Note:

- Use a table of thickness 50mm.
- Remove Washers ❸ if the table is 50mm.
- Use Washers ❹ if the table is 47mm or less.

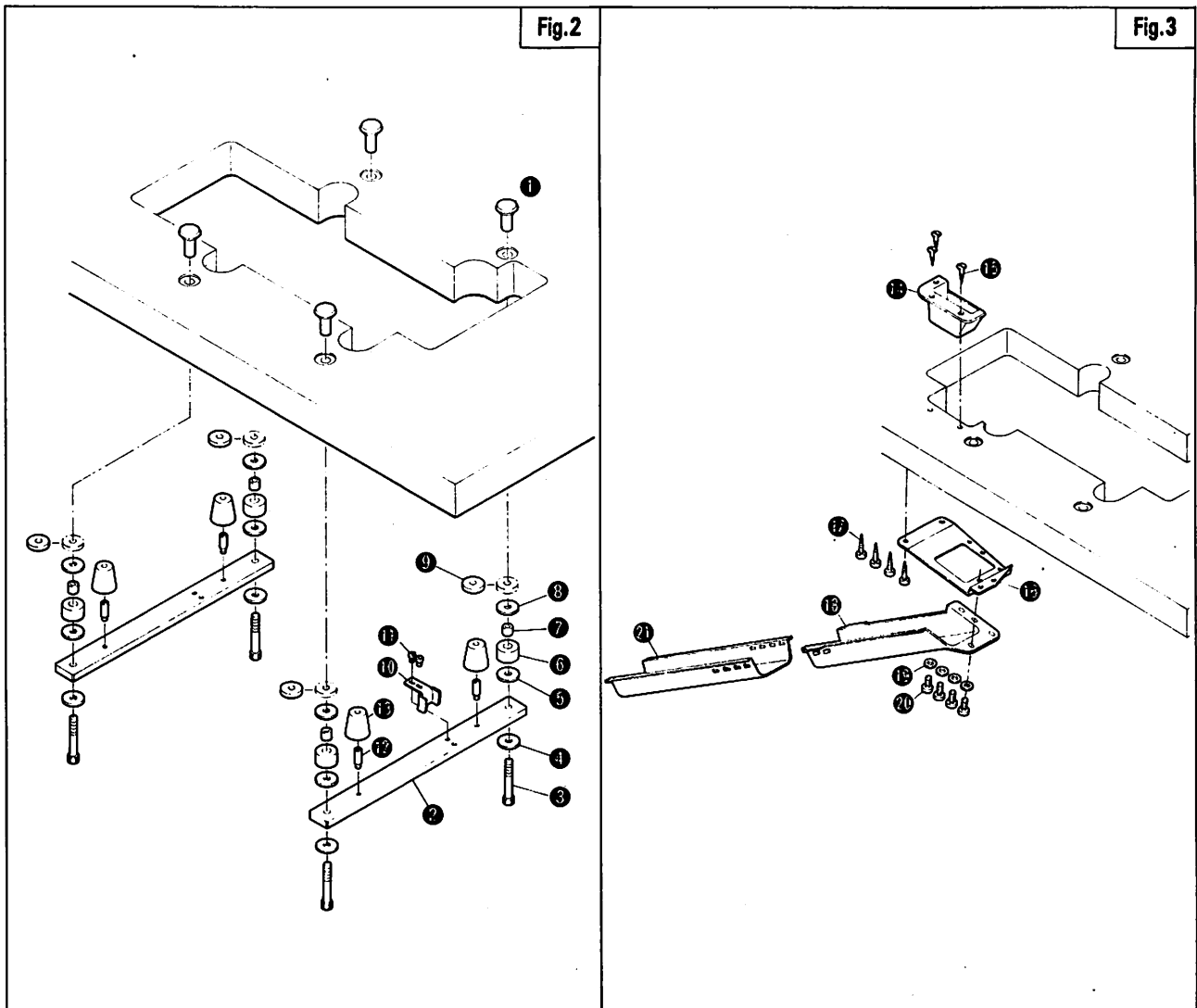
DRIVING MOTOR PULLEY AND BELTING

The machine should use a motor and belt of the following specifications:

- (1) Motor: Clutch motor, 3 phase, 2 pole, 400 watts.
- (2) Belt: V belt, Type M
- (3) Motor pulley: Select an appropriate pulley referring to Table 1.

Table 1

Machine speed (s.p.m.)	Motor pulley outer diameter (mm)	
	60 Hz	50 Hz
6,500	110	135
6,000	105	125
5,500	95	115
5,000	85	105
4,500	80	95
4,000	70	85

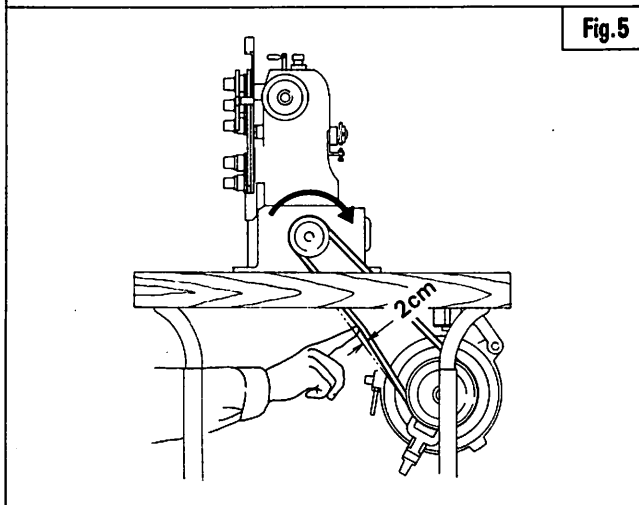
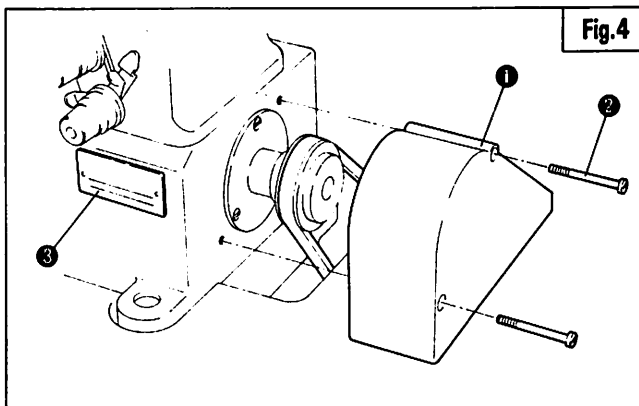


BELT GUARD AND BELTING

- (1) For safety, be sure to fit Belt Guard ❶ with Screws ❷ on machine.
- (2) Adjust the tension of the belt so that it can be 2cm bent inward when you press the middle of it.
Adjust the height of the motor to do this.

THE TURNING DIRECTION OF MACHINE

The turning direction of Machine Pulley is clockwise, seeing the machine from its right side.



MACHINE SPEED

Make sure your machine type number with Type Plate ❸ and run it not exceeding the maximum speed as listed in Table 2.

Note:

The maximum speed may have to be decreased depending on sewing conditions such as fabric, operation, needle size, thread, stitch length, etc.

Select a correct motor pulley size from Table 1 suitable to your operation.

MAXIMUM SPEED

Table 2

MACHINE	Number of needles		MAXIMUM SPEED (S.P.M.)
	2-needle	3-needle	
W562-01	○	○	6,000
W542-01	○		6,500
		○	6,000
W562-02	○	○	6,000
W542-02	○		6,500
		○	6,000
W562-03	○	○	6,000
W542-03	○		6,500
		○	6,000
W562-05	○	○	5,500
W542-05	○	○	5,500
W562-06	○	○	6,000
W542-06	○		6,500
		○	6,000
W562-07	○	○	5,000
W542-07	○	○	5,000
W562-21	○	○	5,000

Note: If the machine is equipped with the metering device, the maximum speed is 5,000 s.p.m.

LUBRICATION

The oil was drained from the machine when shipped. So, fill the machine with oil before starting it for the first time.

1. Lubricating Oil

Use Mobil Velocite oil No. 10 (ISO VG22) or equivalent.

2. To fill oil

Take out Screw ❶ and pour fresh oil until the oil level reaches the upper line 'H' of Oil Level Sight Window ❷. Replace Screw ❶.

3. Oil level

Always keep enough oil in the machine so that the oil level is between two lines H and L of Window ❷.

4. Manual oiling

Before starting machine for the first time, or if the machine is idle for more than a couple of weeks, manually lubricate Needle Bar ❸.

5. Oil circulation check

Be sure to check that oil is splashing inside Window ❹.

Note:

If oil does not splash inside Window ❹, check Oil Filter ❺.

6. Oil Change

Change oil after the first 1 month in operation. After that, **change oil every 6 months.**

Note:

Be sure to change oil because dirty oil can cause excess wear on moving parts and shorten the life time of the machine.

7. To drain oil

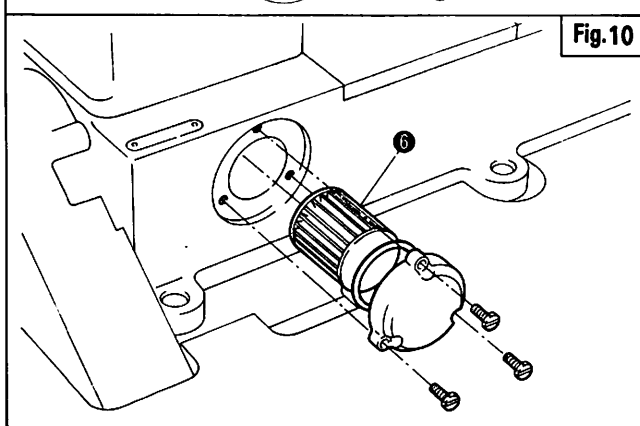
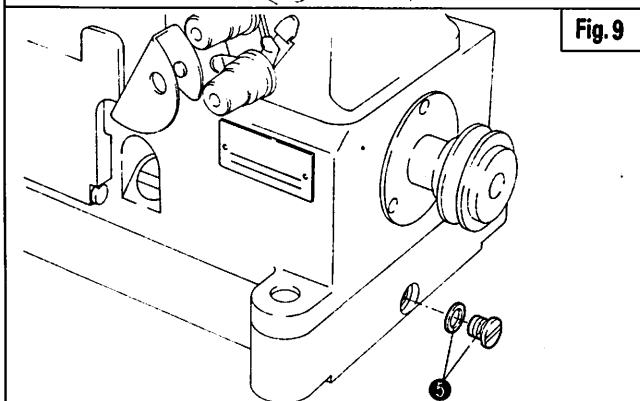
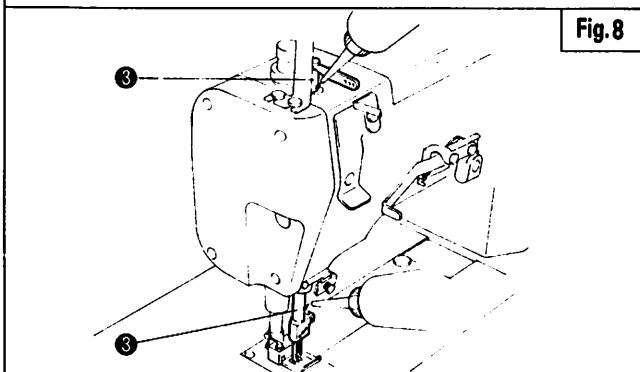
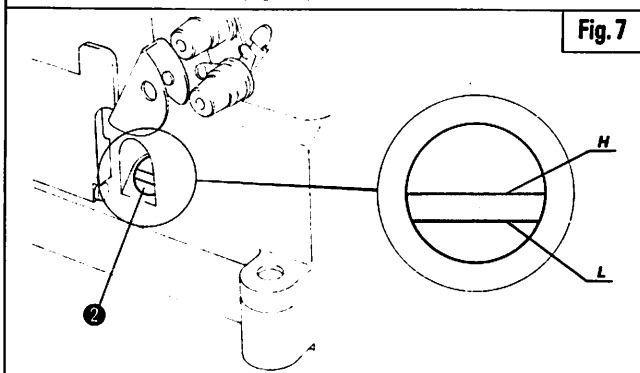
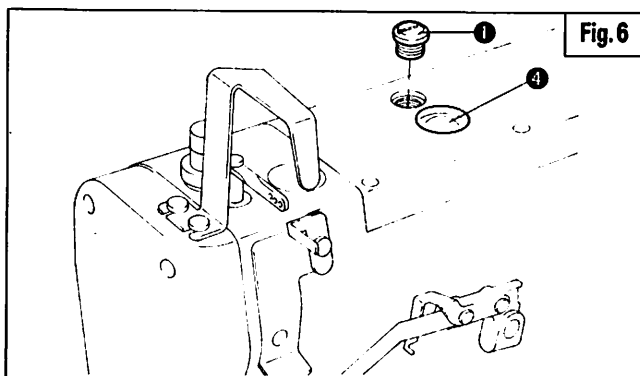
Take out Screw ❽ and drain oil from here.

8. Oil Filter

If Oil Filter ❺ is clogged, normal lubrication cannot be kept. **Check and clean ❺ every 6 months** at the time of the regular oil change.

Note:

If oil jet in Window ❹ is abnormally restricted or weak, or oil contains bubbles, check and clean Oil Filter ❺ or if necessary, replace it with new Oil Filter.



REPLACING OIL FILTER

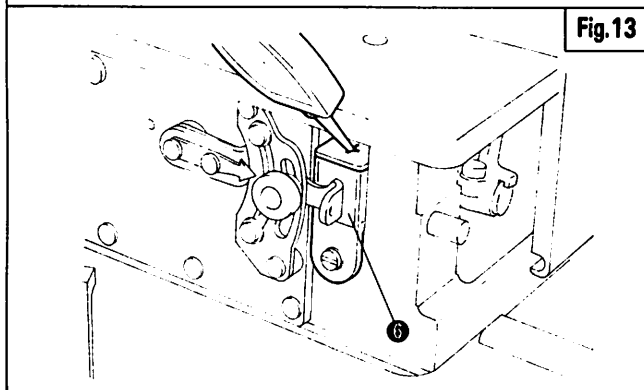
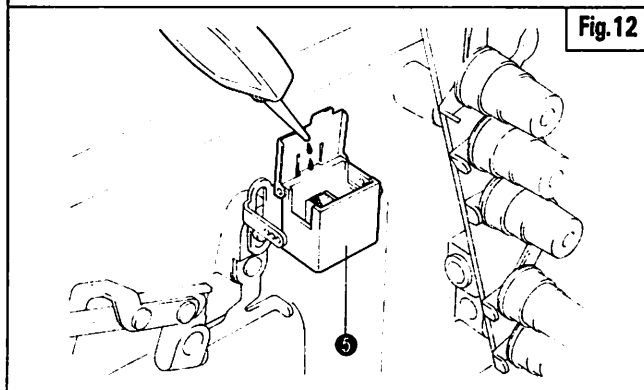
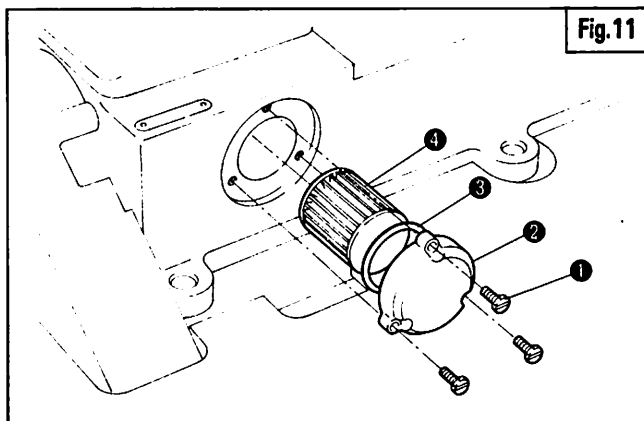
Refer to Fig.11 and disassemble ① ~ ④ in sequence.

Clean Oil Filter ④ or if necessary, replace it with a new one.

SILICONE OIL FOR H.R. DEVICE

Keep Reservoirs ⑤ and ⑥ with factory supplied silicone oil or equivalent.

Never use this oil to lubricate any machine parts.



NEEDLES

The standard needle is as shown in Table 3.

REPLACING NEEDLES

Loosen Screw ⑦ and replace needles.

Insert a new needle into the needle hole as far as it will go, making sure the long groove on the needle is facing you.

Note:

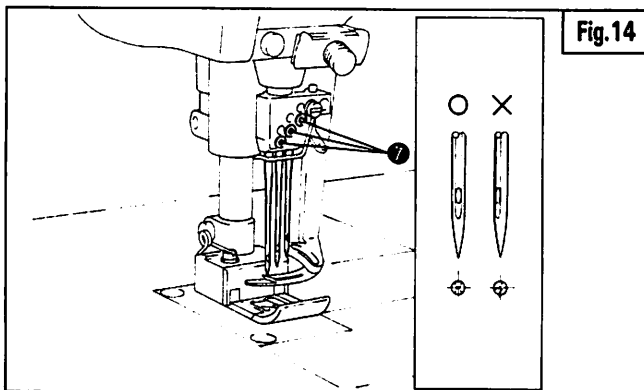
When loosening or tightening Screw ⑦, insert the tip of the allen key fully into the hexagonal hole of Screw ⑦.

NEEDLE SYSTEM AND SIZE

Table 3

NEEDLE SYSTEM	NEEDLE SIZE	
	2-needle	3-needle
Schmetz UY128GAS	# 7 0	# 7 5
Organ UY128GAS	# 1 0	# 1 1

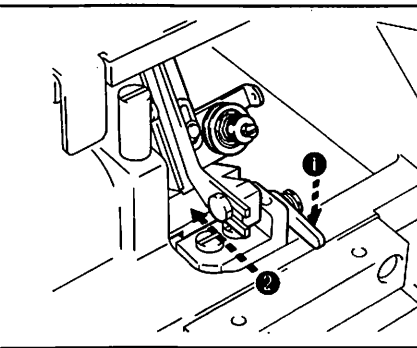
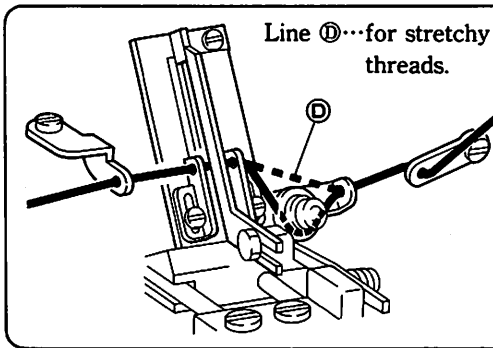
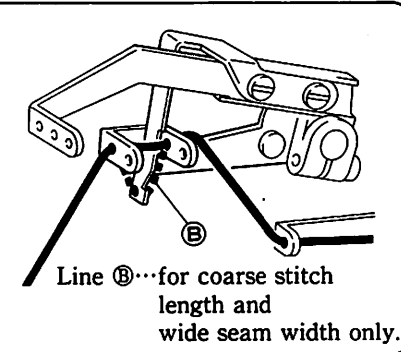
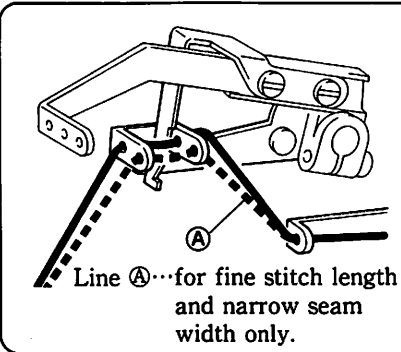
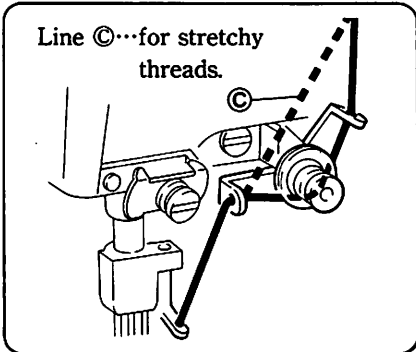
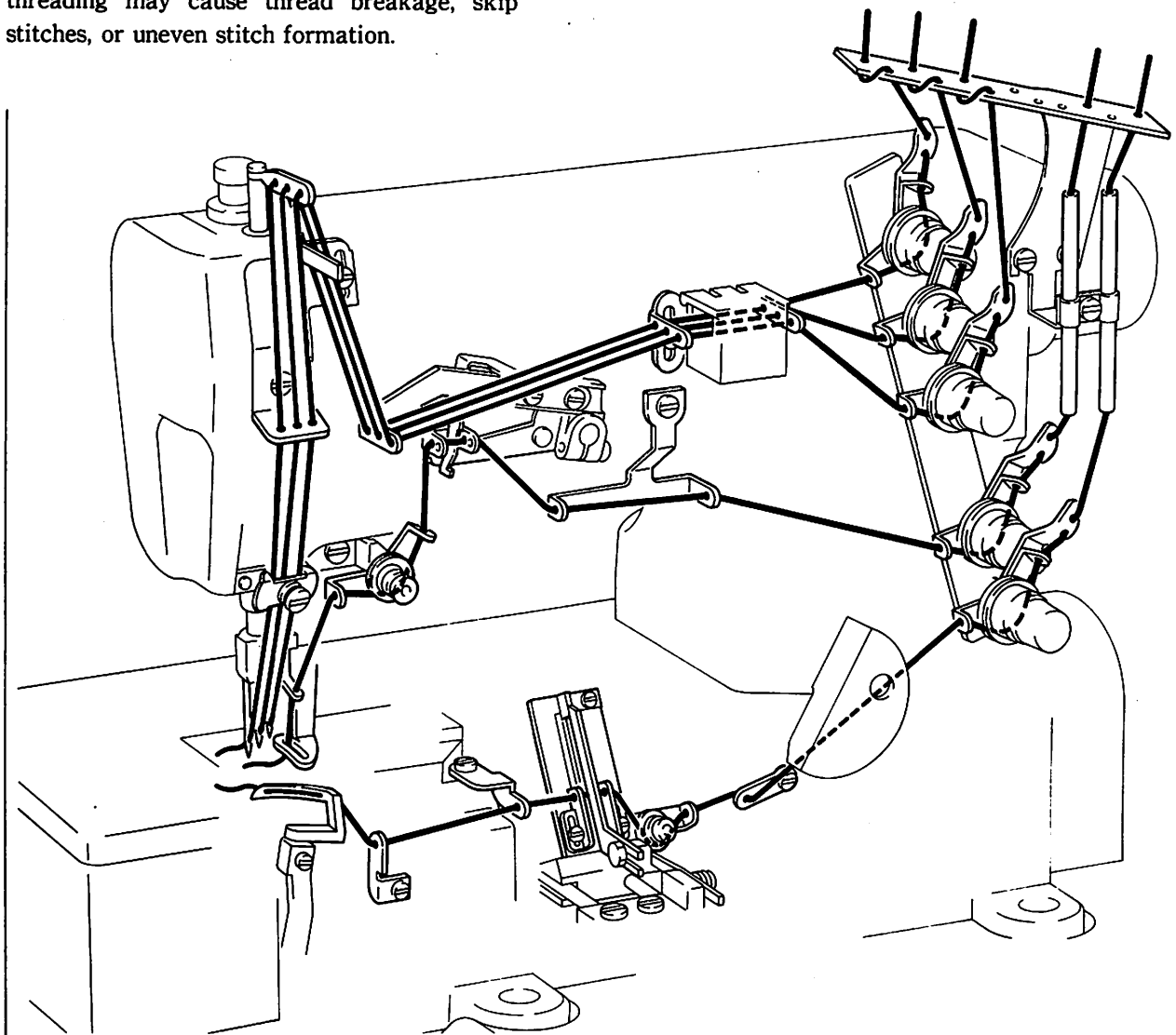
Please note that the needle size varies depending on the number of needles in the machine.



THREADING

Fig.15

Thread your machine correctly. Incorrect threading may cause thread breakage, skip stitches, or uneven stitch formation.



- ① When threading, push Lever ① and Bracket ② will come out.
- ② After finishing threading, push Bracket ② into its original position.

REGULATING THREAD TENSION

Changes of threads, seam width, stitch length, etc. require re-adjustment of thread tension. Adjust individual thread tension as follows:

To increase tension:

Turn Nut ① clockwise.

To decrease tension:

Turn Nut ① counter-clockwise.

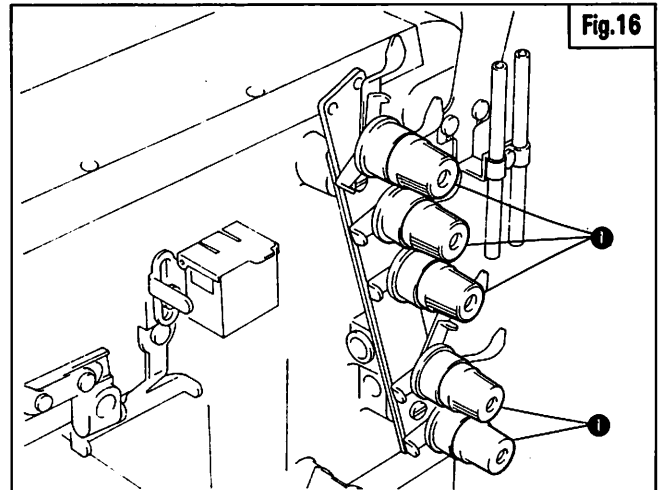


Fig. 16

ADJUSTING NEEDLE THREAD TAKEUP

In the standard setting, the top edge of Bracket ③ should be horizontal when the needle bar is in the lowest position.

To adjust, loosen Screw ④.

The distance between the line (a) of Bracket ③ and the line (b) of the needle thread takeup should be 87mm. To adjust loosen Screws ⑥.

Note:

- To tighten the needle thread, move Needle Thread Takeup ② in the (+) direction.
- To loosen the needle thread, move ② in the (-) direction.
- Take care not to move Spreader Thread Takeup ⑤ from its original position.

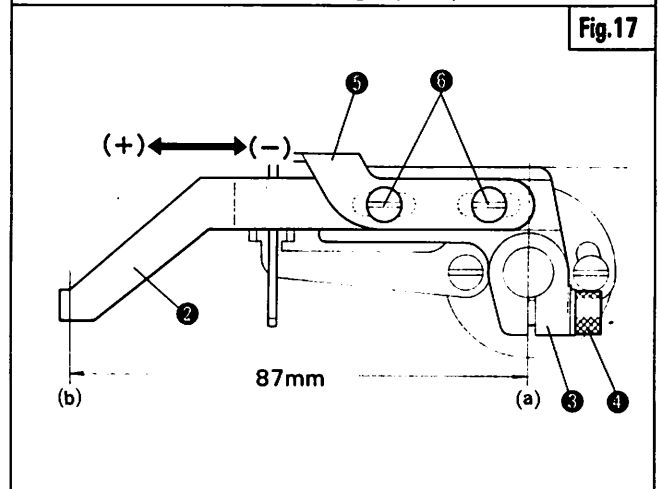


Fig. 17

ADJUSTING SPREADER THREAD TAKEUP

The eye (A) of Thread Guide ⑦ should come to the corner of Spreader Thread Takeup ⑤ when Spreader Thread Takeup ⑤ is in its highest position.

To adjust, loosen Screws ⑧ and ⑨, and move Thread Guide ⑦ up or down.

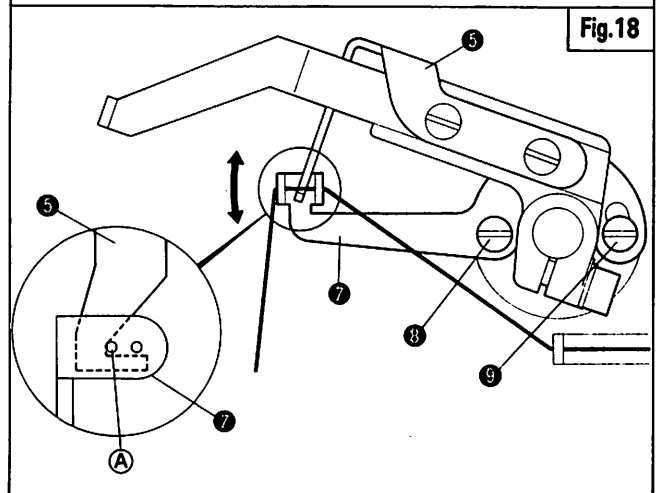
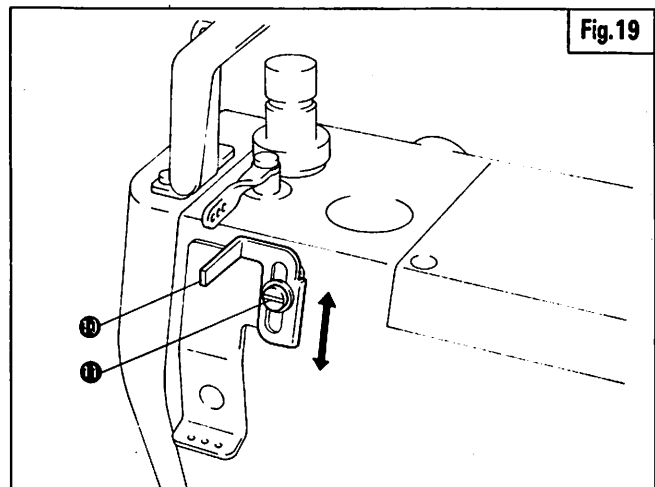


Fig. 18

ADJUSTING NEEDLE THREAD GUARD

Set Needle Thread Guard ⑩ at the center of its elongated hole.

To adjust, loosen Screw ⑪.



ADJUSTING THREAD GUIDE

The standard position of Thread Guide ⑫ is as shown in Table 4.

To adjust, loosen Screw ⑬ and move Thread Guide ⑫ up or down.

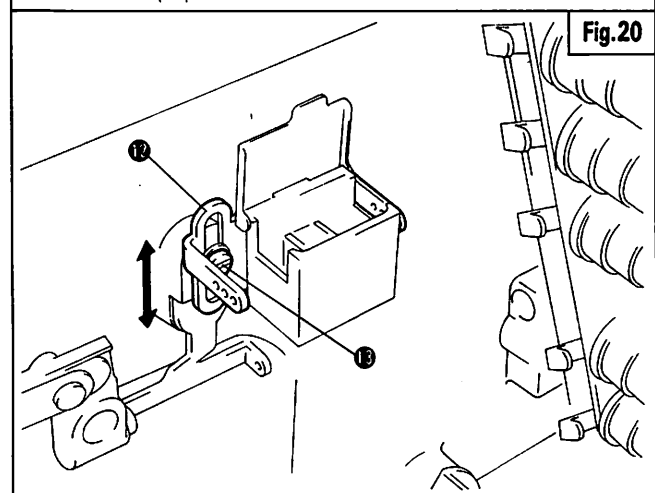
Note:

To tighten the thread, raise Thread Guide ⑫.

To loosen the thread, lower ⑫.

Adjust according to the type of thread used.

Lower Thread Guide ⑫ when weak synthetic threads are used.



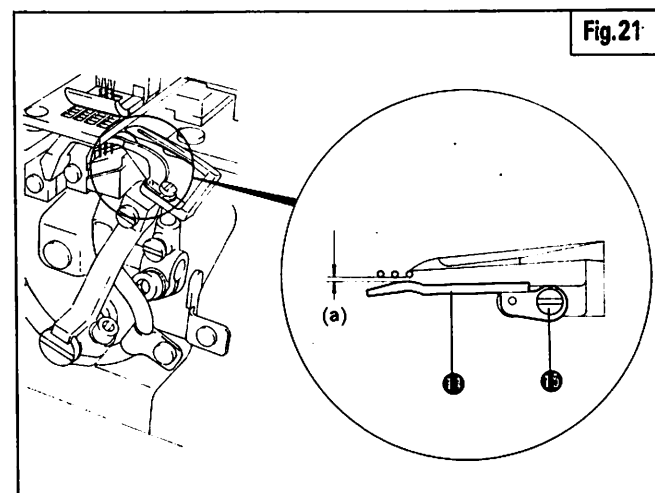
SETTING POSITIONS OF THREAD GUIDE ⑫ Table 4

Needle thread	Polyester spun	Polyester spun	Wooly (H type)
Looper thread	Polyester spun	Wooly (G type)	Wooly (G type)
Position of ⑫	Lowest	Lowest	Center

ADJUSTING NEEDLE GUARD (FRONT)

As the looper passes behind the needles, Needle Guard (Front) ⑭ passes in front of the needles. Set Needle Guard (Front) ⑭ as close as possible to the needle but only one piece of thread passes through the gap (a) smoothly.

To adjust, loosen Screw ⑮ and move Needle Guard (Front) ⑭ back and forth.



ADJUSTING LOOPER THREAD TAKEUP

Looper Thread Takeup ① should release the looper thread at the point (a) when the left needle point is in the following position.

1) 2/3 down the looper for 2-needle machines.

Fig.23.

2) level with the looper's lower edge for 3-needle machines. Fig.24.

To adjust, loosen Screws ② and turn Looper Thread Takeup ①.

SETTING LOOPER THREAD GUARD

Set the distance between Bracket ③ and Looper Thread Guard ④ to:

5.0–6.0mm for 2-needle machines.

6.0–7.0mm for 3-needle machines.

To adjust, loosen Screw ⑤.

SETTING THREAD GUIDES ⑥ and ⑦

Align the eyes of Thread Guides ⑥ and ⑦ with the aligning mark on Bracket ③.

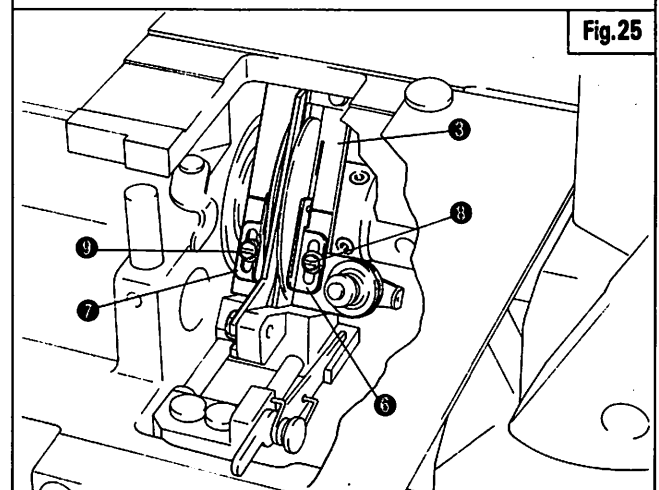
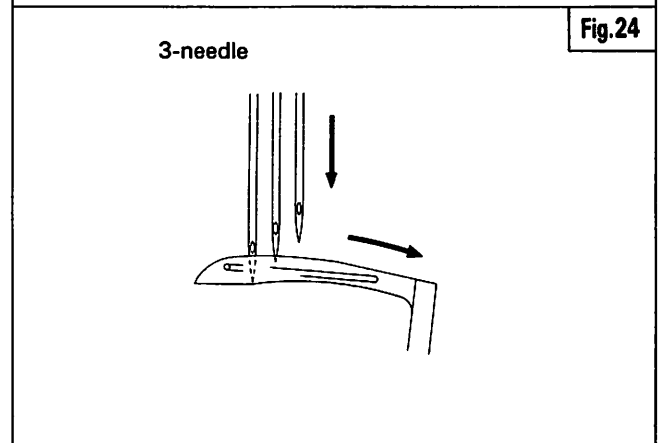
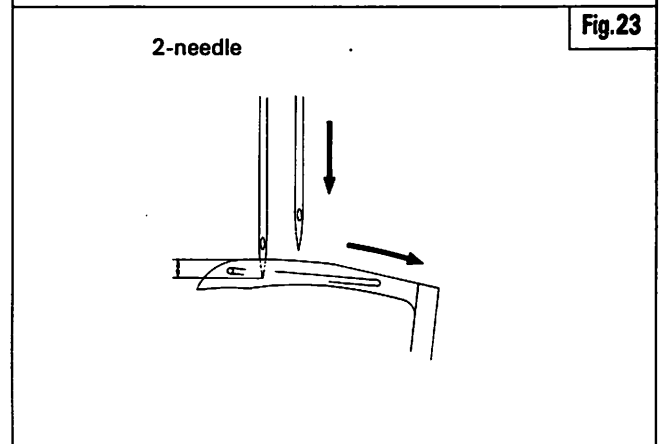
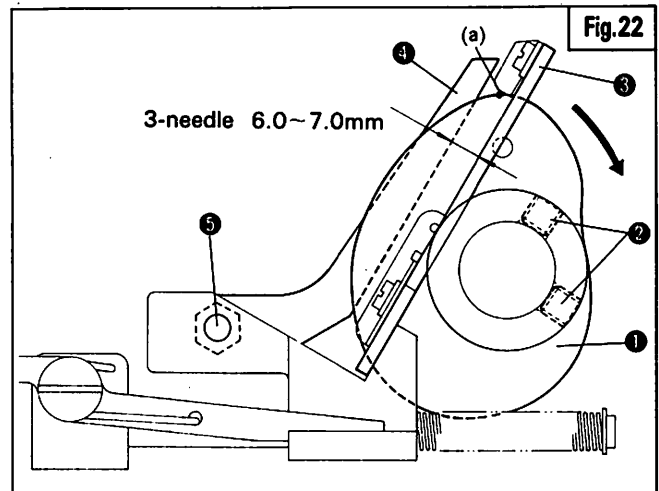
To adjust, loosen Screws ⑧ and ⑨.

Note:

When the looper is at its left dead point, the looper thread between Guides ⑥ and ⑦ should be lightly tensioned. Adjust this according to threads, stitch length and needle gauge.

To increase the amount of thread in the seam, move ⑥ and ⑦ down.

To decrease the amount of thread in the seam, move ⑥ and ⑦ up.



PRESSER FOOT PRESSURE

Presser foot pressure should be as light as possible, while still sufficient to feed fabric and obtain proper stitch formation.

Loosen Nut ⑬ and turn Screw ⑭ and adjust.

STITCH LENGTH ADJUSTMENT

While pressing Push Button ⑫, turn Handwheel ⑬ until Button ⑬ drops in.

Turn ⑬ further for a desired stitch length. Release ⑫.

- For a longer stitch length, turn ⑬ in the (+) direction.
- For a shorter stitch length, turn ⑬ in the (-) direction.

Note:

The figures on Handwheel ⑬ show approximate stitch length.

DIFF. FEED RATIO ADJUSTMENT

The diff. feed ratio is from 1:0.7 to 1:1.3

Loosen Nut ⑮, move Lever ⑯ up or down to change the diff. feed ratio.

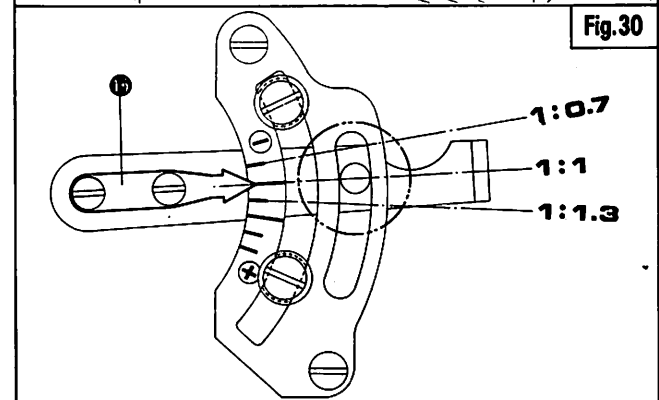
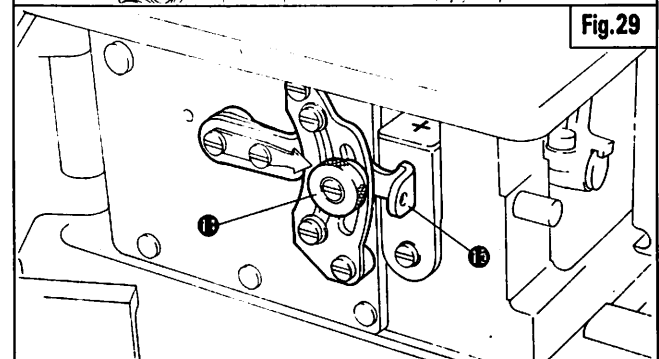
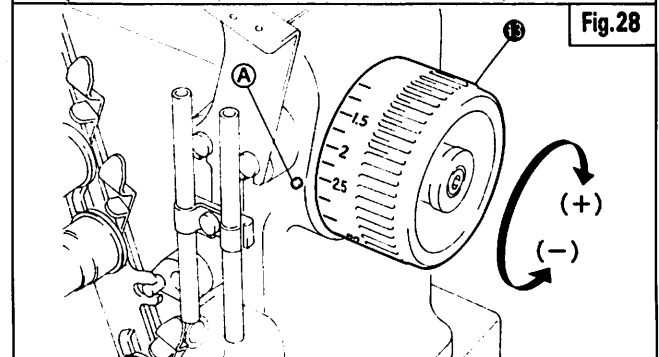
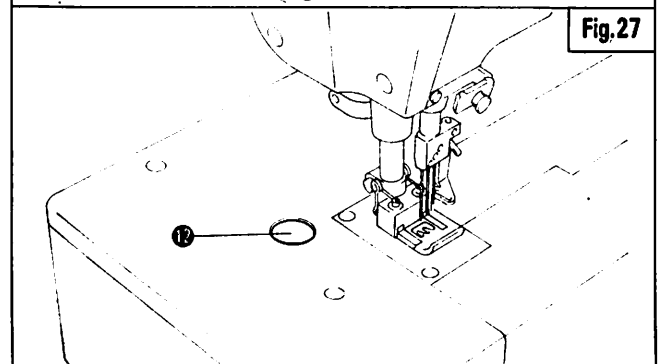
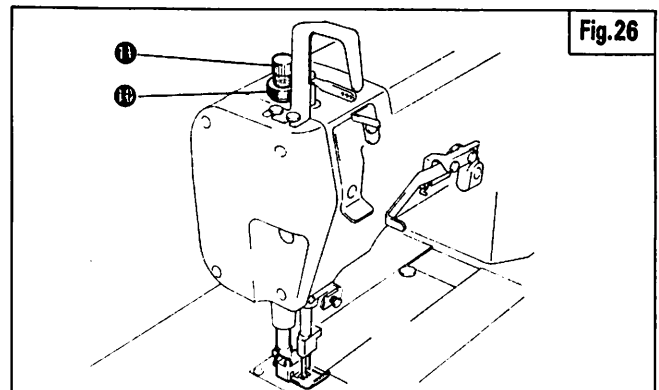
To stretch the fabric, move Lever ⑯ upward.

To gather the fabric, move Lever ⑯ downward.

Note:

Fig. 30 shows approximate diff. feed ratio by setting Lever ⑯.

- The diff. feed ratio is 1:0.7 to 1:1 for W562-05-W542-05.

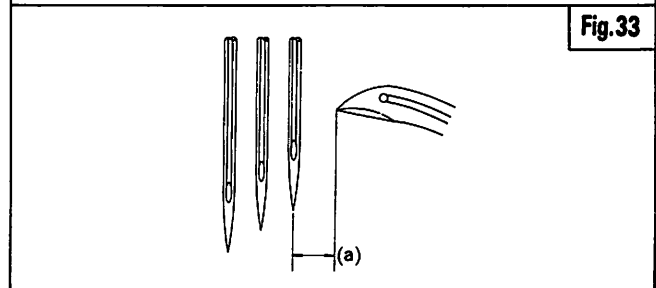
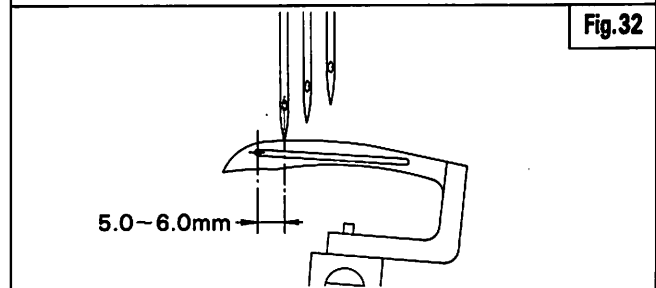
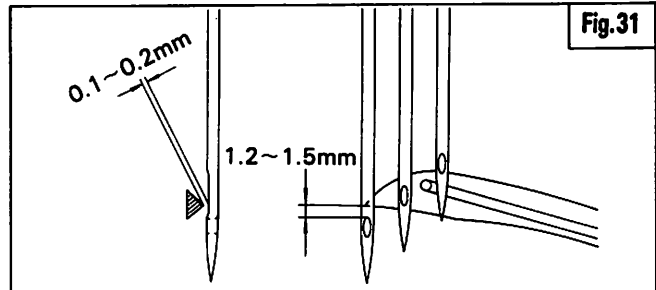


ADJUSTING NEEDLE AND LOOPER

When the looper point is behind the left needle centerline, it should be 1.2–1.5mm above the top of the left needle eye, and the clearance from the needle should be 0.1–0.2mm.

When the left needle comes down and its point is flush with the top of the looper blade, the distance between the looper eye center and the left needle centerline should be 5.0–6.0mm.

Adjust in the following manner.



NEEDLE HEIGHT SETTING

The standard setting is as shown in Table 5. The needle height is the distance (a) between the left needle point and the needle plate surface when the needle bar is in the highest position.

Raise the needle bar to the highest position and adjust the height as shown in Table 5.

To adjust, remove Cap Screw ❶, loosen Screw ❷, and move the needle bar up or down.

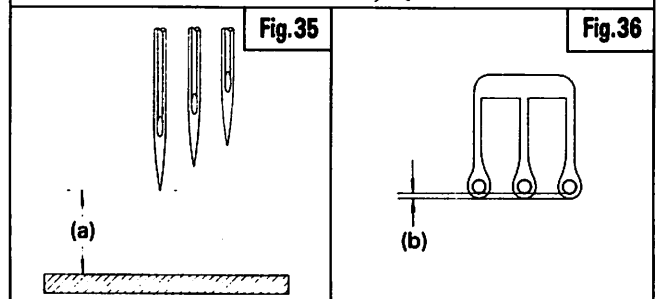
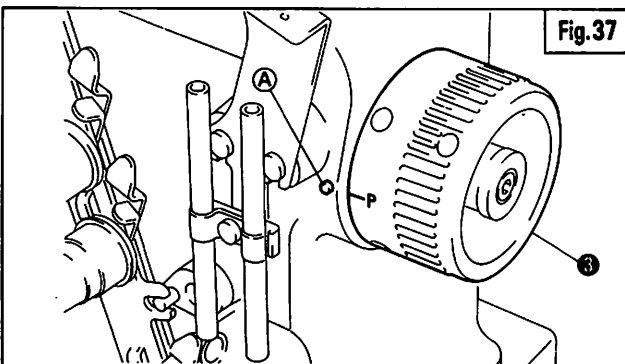
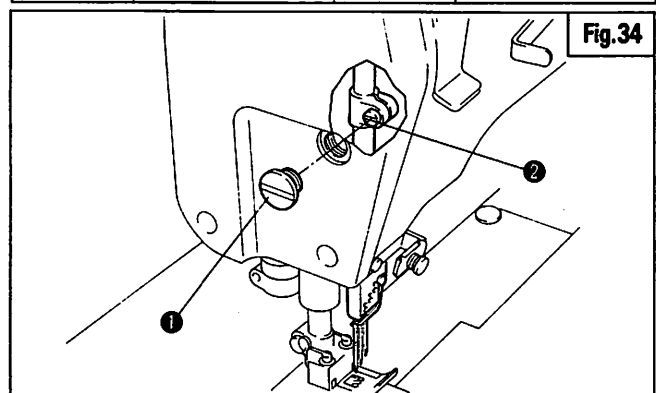
Note:

- After this adjustment, make sure that each needle passes through the center of the needle hole in the needle plate and that the gap (b) is even. Fig. 36.
- When the needle bar is in its highest position, the mark Ⓟ on the handwheel should meet the mark Ⓐ.

NEEDLE HEIGHT

Table 5

2-needle		3-needle	
Needle space	Needle height (a)	Needle space	Needle height (a)
2.4mm	10.2~10.7mm		
3.2mm	9.8~10.3mm		
4.0mm	9.3~9.8mm		
4.8mm	8.9~9.4mm	4.8mm	8.9~9.4mm
5.6mm	8.5~9.0mm	5.6mm	8.5~9.0mm
6.4mm	8.1~8.6mm	6.4mm	8.1~8.6mm



LOOPER SETTING

The standard setting is as shown in Table 6. Make sure that the setting is correct for your machine.

The distance (a) is from the right needle centerline to the looper point when the looper is at the right dead point. Set the distance (a) in the following steps.

①SETTING LOOPER

Refer to Fig.38 and set the looper.

②ADJUSTING DISTANCE (a)

Set the distance (a) correctly. Table 6.

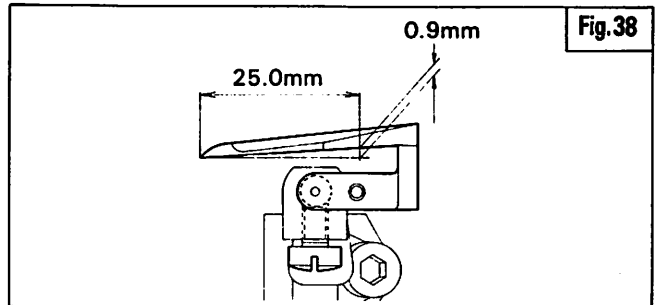
To adjust, loosen Screw ④ and move Looper Holder ⑤ right or left.

③CLEARANCE BETWEEN NEEDLE AND LOOPER POINT

Set the clearance between the left needle and the looper point to 0.1–0.2mm when the looper point is behind the left needle centerline.

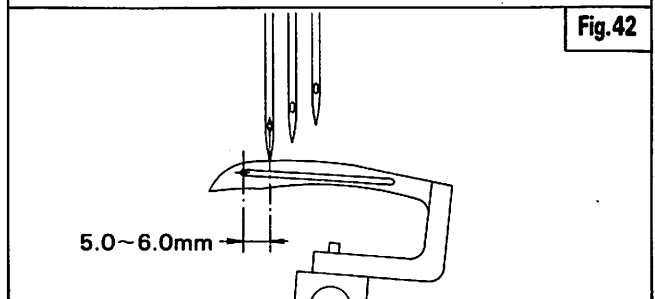
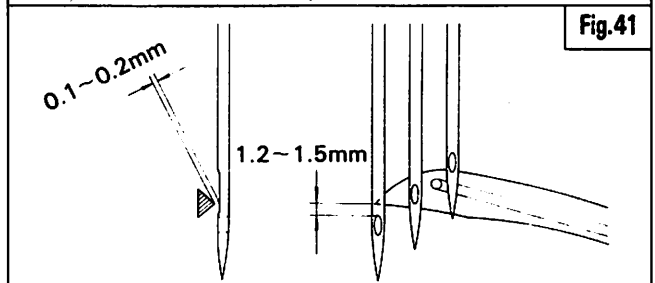
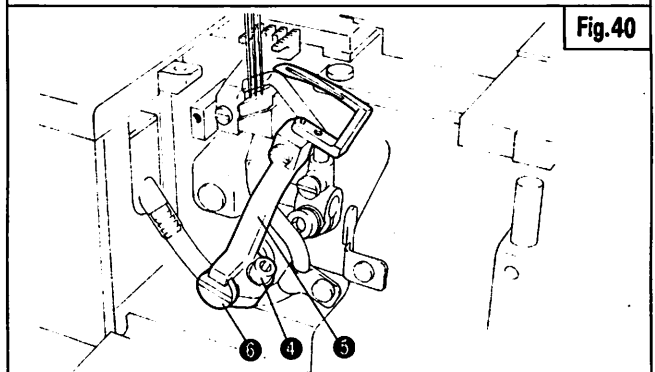
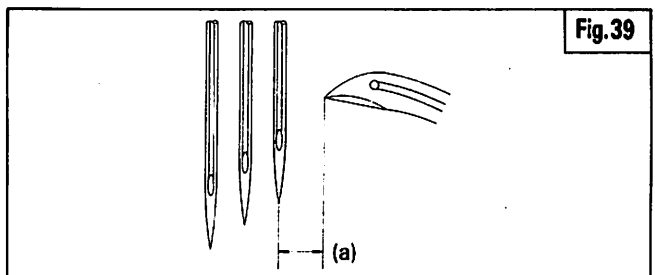
To adjust, loosen Screw ④ and turn Screw ⑥.

- In the case of 3-needle machines, when the looper point is behind the middle needle centerline, the clearance should be 0–0.5mm.



DISTANCE BETWEEN NEEDLE AND LOOPER Table 6

2-needle		3-needle	
Needle space	Distance (a)	Needle space	Distance (a)
2.4mm	4.6~4.9mm		
3.2mm	4.2~4.5mm		
4.0mm	3.8~4.1mm		
4.8mm	3.4~3.7mm	4.8mm	3.4~3.7mm
5.6mm	3.0~3.3mm	5.6mm	3.0~3.3mm
6.4mm	2.6~2.9mm	6.4mm	2.6~2.9mm



ADJUSTING NEEDLE GUARD

Needle Guard ① should work so that the clearance between the right needle and the looper point is 0–0.05mm when the looper point is behind the right needle centerline. Also that the clearance between the middle needle and the looper point is 0–0.05mm when the looper point is behind the middle needle centerline.

1. Adjust so that the line (A) of Needle Guard ① is 1/3 below the top of the right needle eye when the needle is in the lowest position. Fig. 43.

To adjust, loosen Screw ② and move Needle Guard ① up or down.

2. To obtain the above clearances 0–0.05mm, loosen Screw ③ and move Needle Guard ① back and forth.

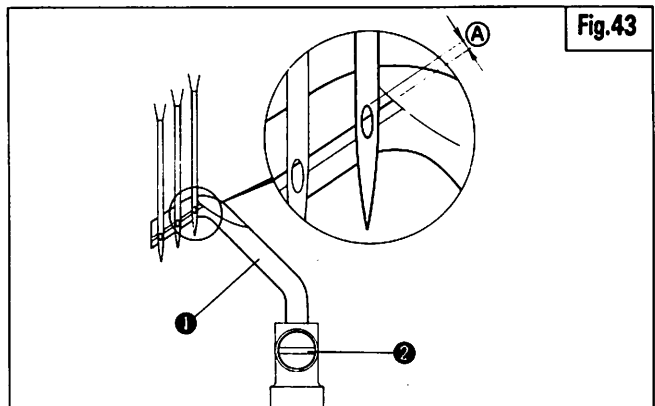


Fig.43

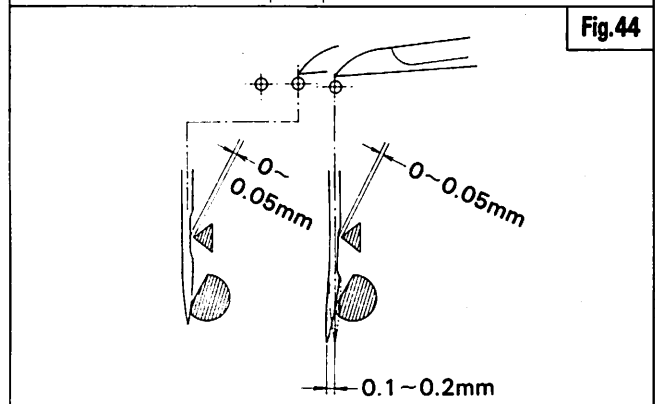


Fig.44

ADJUSTING FEED HEIGHT

When the main feed dog is in the highest position, set the height to 0.8–1.0mm.

Adjust the diff. feed dog so that the point B is on the same level as the main feed dog point C. To adjust, loosen Screws ④ and ⑤, and move the feed dog up or down.

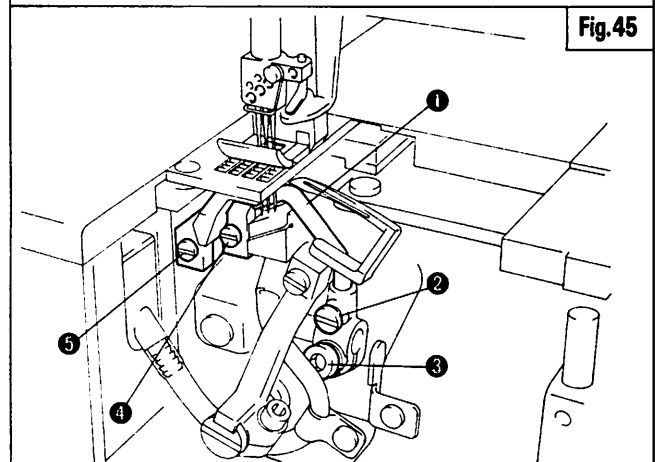


Fig.45

ADJUSTING FEED TILT

The teeth of the feed dogs should be level with the needle plate surface when they first appear above the needle plate surface.

To adjust:

1. Remove three Screws ⑥ and Cover ⑦.
2. Remove Plug ⑧ and loosen Screw ⑨.
3. Open Side Cover ⑩ and remove Screw ⑪.
4. To adjust the feed tilt, insert a screwdriver into the adjusting hole and turn Screw ⑫.

Note:

- The feed tilt is altered by turning Screw ⑫. Set Screw ⑬ to the correct position and tighten Screw ⑨.
- Make sure that the shaft does not slide out when Screw ⑫ is turned.
- Remember to adjust the feed height after the feed tilt adjustment.

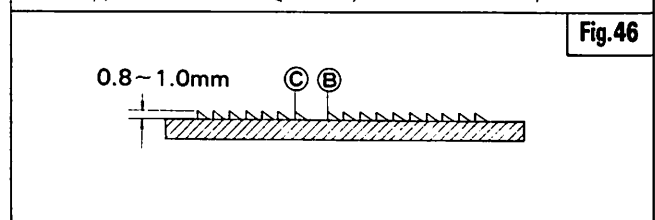


Fig.46

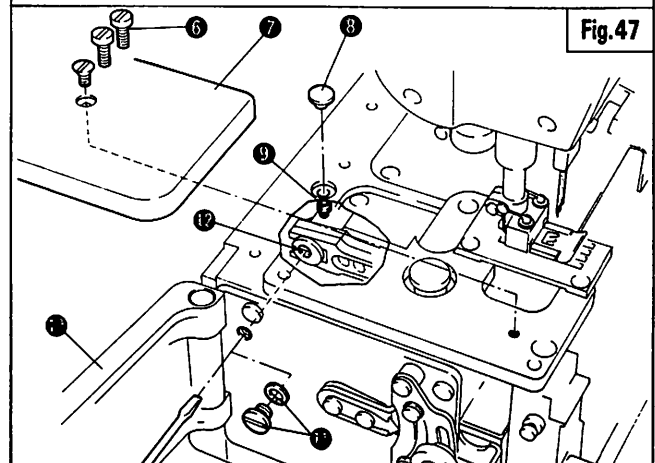


Fig.47

SETTING POSITION OF SPREADER

HEIGHT: The height of the spreader from the needle plate surface should be 9.2 – 9.7mm.

SIDewise POSITION: The hooking point should pass the point (A) approximately 0.5mm in front of the left needle. When the spreader reaches its left dead point, the hooking point should be at the point (B) 3.5 – 4.0mm from the left needle.

To adjust:

1. Lightly loosen Screws ① and ②. While turning Lever ③, move Spreader ④ back and forth to set the sidewise position. Tighten Screw ⑤.

Note:

After making the above adjustments, turn the handwheel and check points (A) and (B) for Spreader ④.

2. Move Spreader ④ up or down, and set its height to 9.2 – 9.7mm. Tighten Screw ⑥.

ADJUSTING SPREADER STROKE

The stroke of Spreader ④ is 16.0mm.

1. Remove the arm cover and Screws ⑦, and shift Cover ⑧.
2. Loosen Nut ⑨ and move Rod ⑩ up or down.
 - To decrease the stroke, move Rod ⑩ up.
 - To increase the stroke, move Rod ⑩ down.

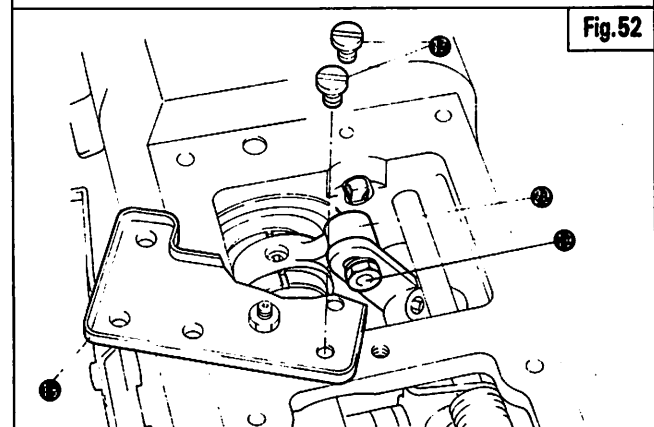
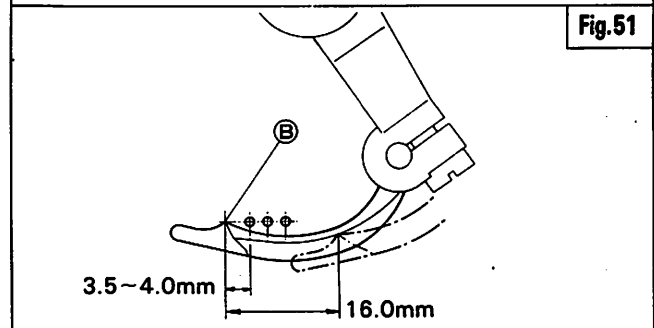
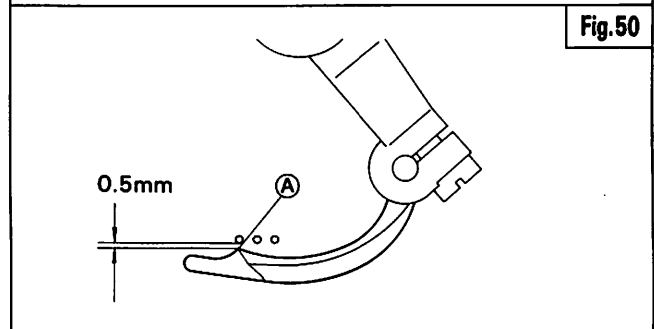
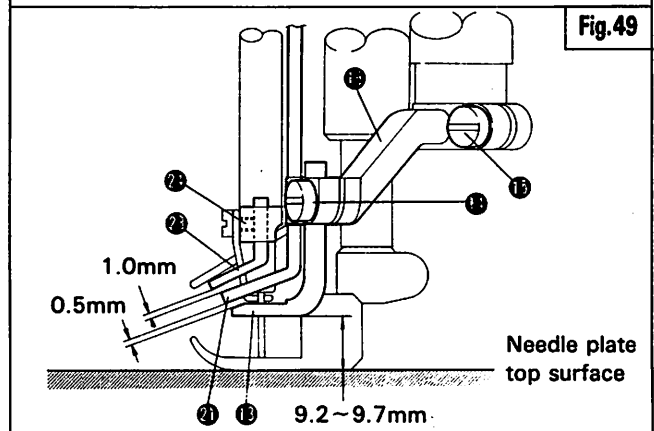
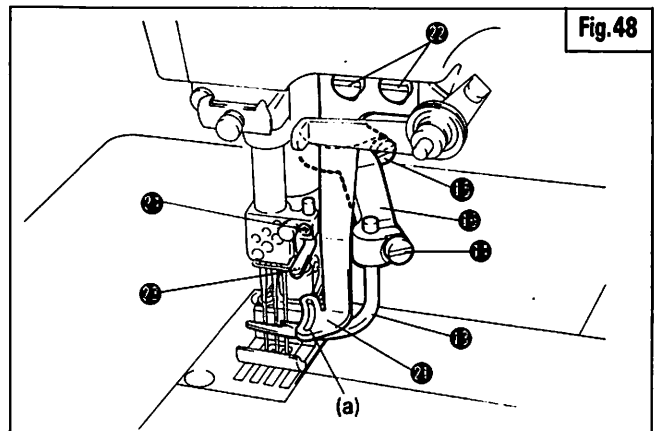
SETTING POSITION OF SPREADER THREAD GUIDE

Set the part (a) of Thread Guide ⑪ just below the eye of Guide ⑫ when the needle bar is in the lowest position. Also, set the clearance between Thread Guide ⑪ and Spreader ④ to 0.5mm.

SETTING THREAD GUIDE

When the needle bar is in the lowest position, set the clearance between Spreader Thread Guide ⑬ and Thread Guide ⑭ to 1.0mm.

The eye of Thread Guide ⑭ should face forwards.



ADJUSTING FOOT LIFT

The standard setting is as shown in Table 7. The foot lift is the distance (a) between the presser foot and the needle plate when the presser foot is raised.

To adjust:

1. Turn the handwheel and lower the feed dogs to their lowest position.
2. Loosen Nut ② and tighten Screw ③.
3. Lower Lever ④ and raise Presser Foot ① to the correct height (a) for your machine.
4. In the above condition, adjust Screw ③ so that its head touches Lever ④. Lock this position with Nut ②.

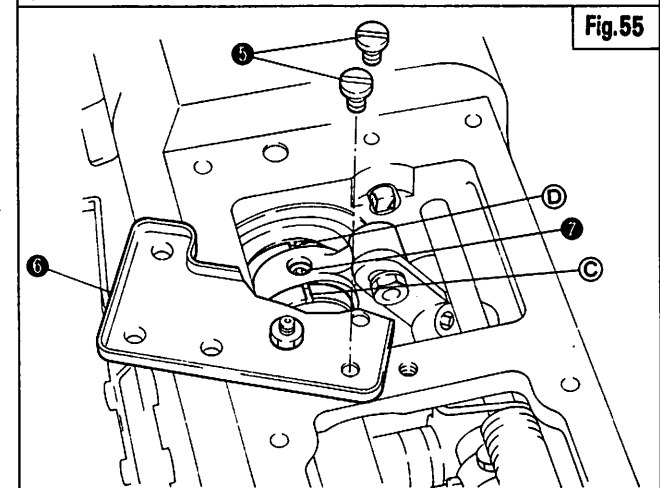
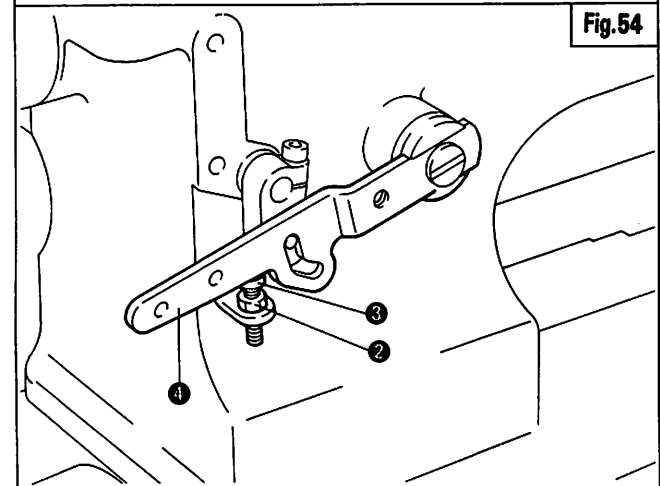
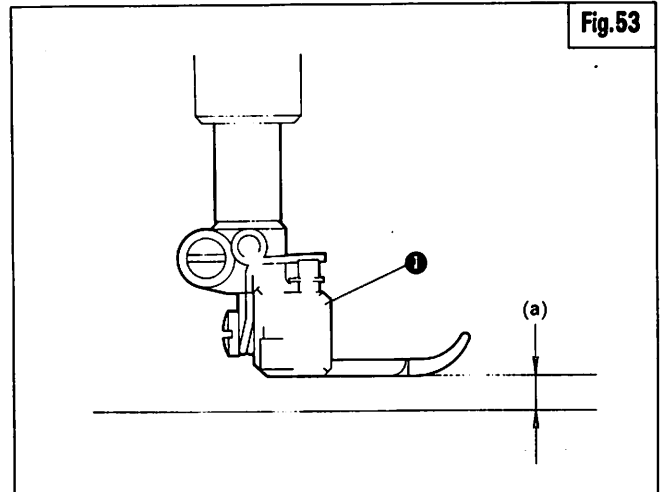
Table 7

Machine type	Presser foot lift	
	2-needle	3-needle
W562-01	7.0 mm	5.0 mm
W542-01	7.0 mm	7.0 mm
W562-02	7.0 mm	5.0 mm
W542-02	7.0 mm	7.0 mm
W562-03	7.0 mm	5.0 mm
W542-03	7.0 mm	7.0 mm
W562-05	6.0 mm	5.0 mm
W542-05	7.0 mm	7.0 mm
W562-06	6.0 mm	5.0 mm
W542-06	7.0 mm	7.0 mm
W562-07	6.0 mm	5.0 mm
W542-07	7.0 mm	7.0 mm

ADJUSTING SPREADER TIMING

To adjust the timing of Spreader against the needle bar:

1. Remove the arm cover. Remove Screws ⑤ and move Oil Guard ⑥ to one side.
2. Loosen two Screws ⑦. Position the aligning mark © of the upper shaft with the mark ④ of the eccentric. Tighten Screw ⑦.



SYNCHRONIZING NEEDLE BAR AND LOOPER

The looper should be at the right dead point when the needle bar is in the lowest position. The looper should begin to move as the needle bar begins to rise. The looper should pass behind, and then return in front of the needles at exactly the same level.

To adjust:

1. Remove the arm cover.
2. Loosen 4 Screws ⑧, turn Handwheel ⑬ and shift the position of Upper Belt Gear ⑭.
 - To advance the looper timing against the needle, shift the position in the (+) direction.
 - To retard the looper timing against the needle, shift the position in the (-) direction.

Note:

The looper holder is at the right dead point when the needle bar is in its lowest position. Synchronization between the needle bar and the looper may change when the looper avoiding motion is adjusted. In this case, adjust as above.

ADJUSTING THE TIMING BETWEEN NEEDLE AND LOOPERS BACK AND FORTH MOVEMENT

To adjust this timing, loosen Screw ⑨ and align the mark © on Eccentric ⑩ with the mark ① on the crankshaft.

ADJUSTING LOOPER AVOIDING MOTION

The looper goes behind the needles to the left dead point and then returns in front of the needles to the right. Adjust the looper avoiding motion according to the needle size.

1. Loosen Nut ⑪ and turn Adjusting Screw ⑫.
 - To increase the looper avoiding motion, turn Adjusting Screw ⑫ counter-clockwise. To decrease it, turn ⑫ clockwise.

Note:

- After the above adjustment, check the synchronization between the needle bar and looper. If it has been changed, re-adjust.
- Please note that the looper avoiding motion may not be necessary to be adjusted unless otherwise an extremely different size needle is fitted.

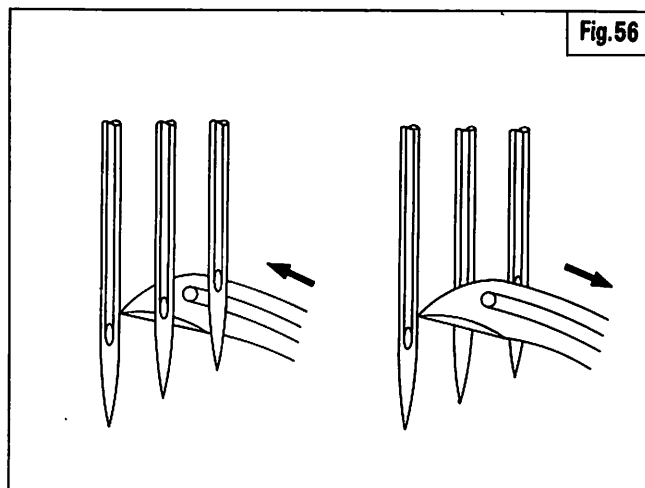


Fig.56

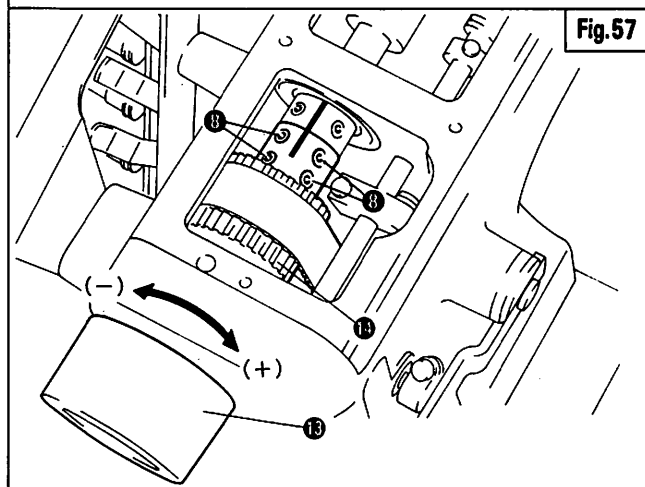


Fig.57

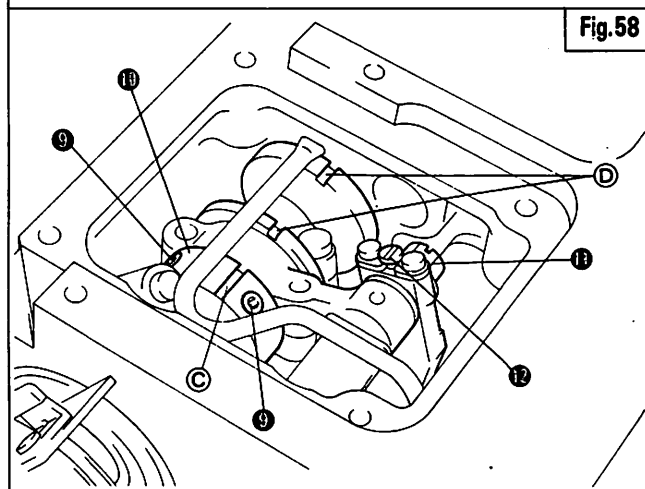


Fig.58

UNDER FABRIC TRIMMER (FT140)

The under fabric trimmer of the W500 is a continuous type.

The knife movement is synchronized with the feed dog motion.

The knives trim the excess fabric before sewing so that together with the lace fed by the metering device, it can be sewn neatly.

Lubrication

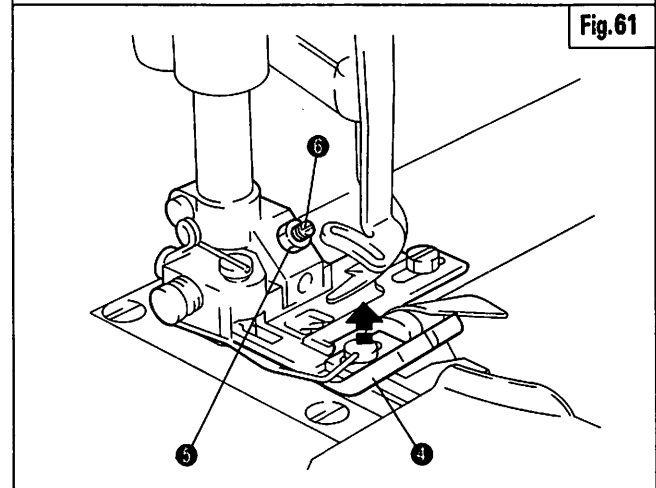
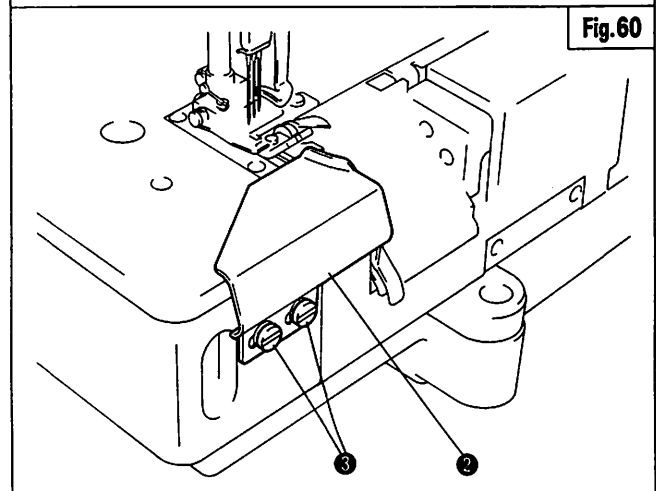
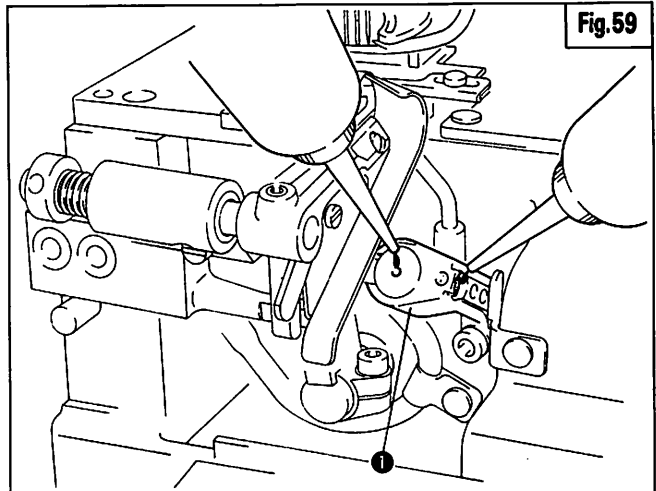
Before the machine is operated for the first time or after it has been idle for a period of time, oil Crank ❶.

Adjusting fabric guide

Fabric Guide ❷ ensures a constant distance between the fabric edge and the right needle. To adjust, loosen Screw ❸ and move Fabric Guide ❷ right or left.

Adjusting presser foot tilt

The presser foot on the W500-05 can be tilted. Adjust this according to the elastic and fabric to be sewn. For thick elastic, tilt the front edge of the presser foot upwards. The elastic can then feed smoothly under the presser foot. To adjust, loosen Nut ❹ and turn Screw ❺.



Replacing upper knife

1. Turn the handwheel and bring Upper Knife ⑦ to the highest position. Replace with a new upper knife.

Note:

Set Upper Knife ⑦ with Screw ⑩ so that its edge (a) is flat on Upper Knife Holder ⑦.

2. Turn the handwheel and bring Upper Knife ⑦ to the lowest position. Make sure that the overlap of the knives is approximately 0.5mm.
3. Insert a piece of thread between the knives and make sure that the knives cut sharp.

Replacing lower knife

1. Open the side cover. Loosen Screw ⑫ and remove Lower Knife ⑪.
2. Shift Upper Knife Holder ⑦ to the right. Insert Lower Knife ⑪ into Lower Knife Holder ⑬. Be sure that the cutting edge of Lower Knife is level with the needle plate surface.
3. Insert a piece of thread between the knives and make sure that the knives cut sharp.

Position of lower knife holder

The position of Lower Knife Holder ⑦ determines the trimming position of the knives. Adjust this so that the excess fabric is trimmed and the fabric is sewn together with the elastic/lace neatly.

To adjust, loosen Screws ⑭ ⑮ and turn Adjusting Screw ⑯.

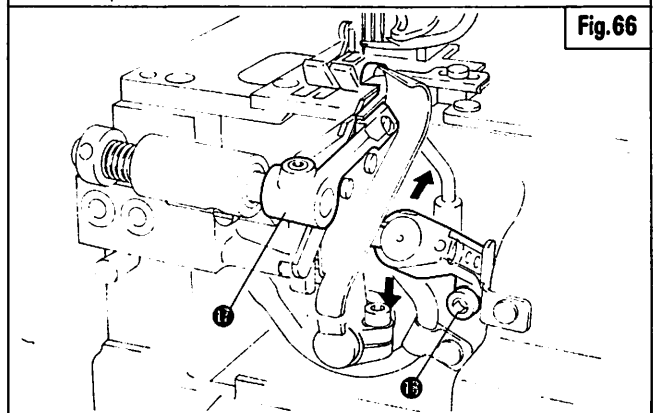
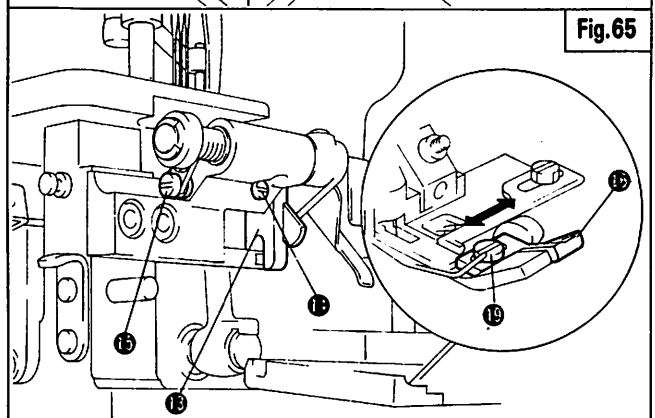
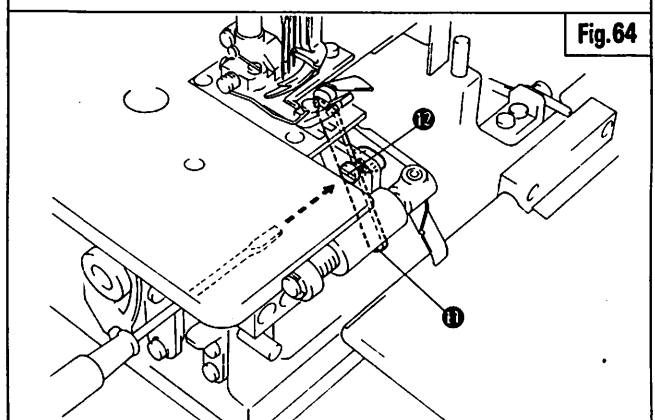
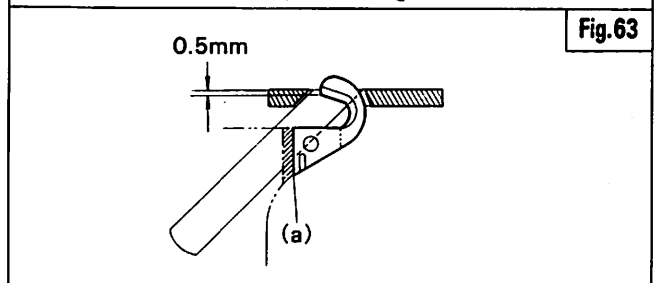
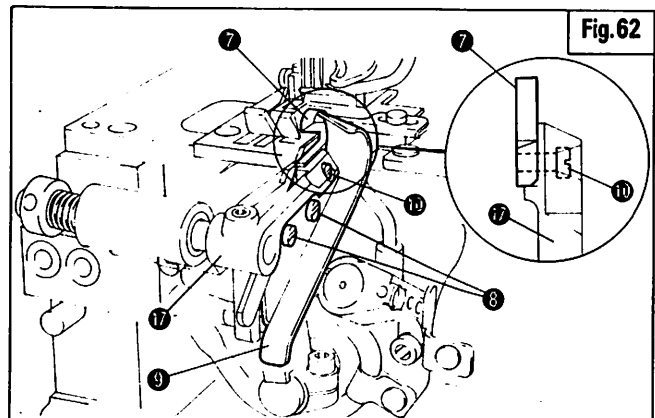
To move Holder ⑦ to the left, turn Screw ⑰ clockwise. To move ⑦ to the right, turn ⑰ counter-clockwise.

Note:

Re-adjust the position of Knife Guide ⑱ on the presser foot when the above adjustment is made.

Adjusting the height of upper knife holder

Set the height of Upper Knife Holder ⑦ so that the overlap of the knives is 0.5mm when the upper knife is in the lowest position. Fig.63. To adjust, loosen Screw ⑰ and move Upper Knife Holder ⑦ up or down.



METERING DEVICE (MD230)

The metering device feeds elastic or lace (width up to 40mm) accurately.

The feeding range is 0.9 – 3.5mm per stitch.

Setting lace guide

Refer to Fig.67 Remove Screw ① and fit Lace Guide ③ (②~⑤ in sequence).

Lubrication

The clutches and bearings of the metering device come pre-filled with grease. Always keep them full with grease.

Lubrication to clutch

Align the mark (A) on Crank ⑥ and the mark (A) on Sleeve ⑦ with the mark (A) on Plate ⑧. Remove Cap Screw ⑨ and insert the grease. Remove Screw ⑩ and check whether the clutch is full with grease or not.

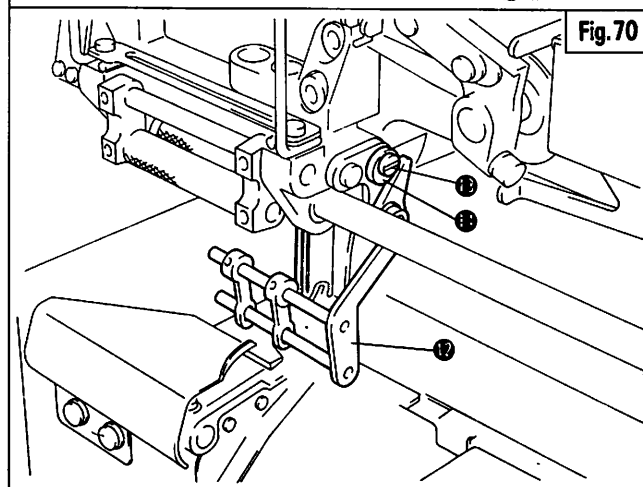
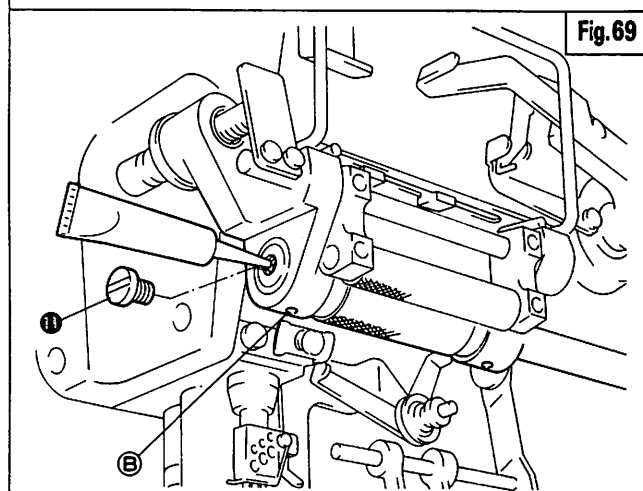
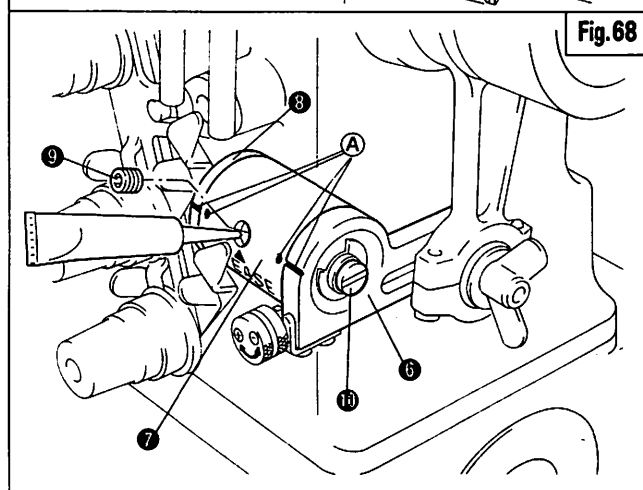
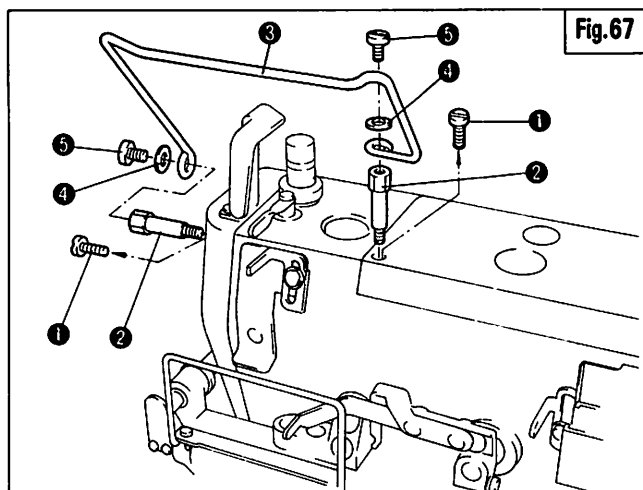
Lubrication to bearings

To lubricate the bearings, remove Cap Screw ⑪ and insert grease.

The amount of grease can be checked through the hole B.

Setting lace guide (lower)

Set Lace Guide (Lower) ⑫ as close as possible to the needle but not touching the spreader. To adjust, loosen Screw ⑬ and turn Stopper ⑭.



Setting positions of elastic guides

Set the positions of the elastic guides according to the width or elastic.

1 Guide on the presser foot

Set Guide 17 so that elastic is fed under the presser foot in the correct position.

To adjust, loosen Screw 18 and move Guide 17 sidewise.

2 Guides 17 and 18

Set Guides 17 and 18 in line with Guide 15.

To adjust, loosen Screws 19 and 20, and move Guides 17 and 18 sidewise.

3 Guides 21 and 22

Set Guides 21 and 22 so that elastic runs into Guides 15 and 16 in a straight line.

To adjust, loosen Screws 23 and 24, and move Guides 21 and 22 sidewise.

Adjusting elastic feeding rate

Two settings are available for this metering device.

One is standard and the other is special.

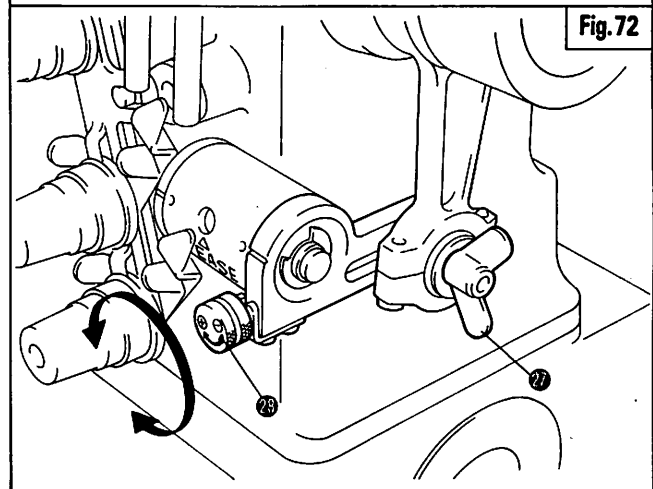
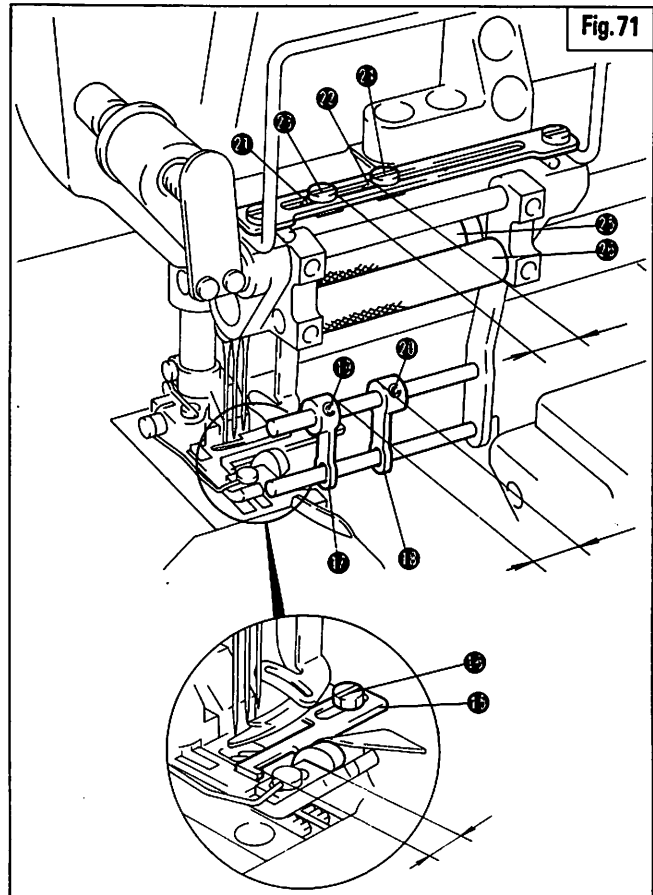
1 Standard setting

On the standard setting, the feeding range is 0.9 – 2.2mm per stitch.

To adjust, loosen Wing Nut 25 and turn Adjusting Screw 26.

To increase the feeding rate, turn Screw 26 in the (+) direction.

To decrease the feeding rate, turn Screw 26 in the (-) direction.



Special setting

On the special setting, the feeding range is 1.4 – 3.5mm per stitch.

To change the standard setting to the special setting:

1. Loosen two Set Screws ② of Eccentric ①.
2. Insert a key wrench into either of Screws ②. While keeping Eccentric ① still, turn Handwheel ③ clockwise until it stops. Tighten Screws ②.
3. Loosen Wing Nut ④ and turn Adjusting Screw ⑤.

To increase the feeding rate, turn ⑤ in the (+) direction.

To decrease the feeding rate, turn ⑤ in the (-) direction.

Adjusting tension

The pressure of Elastic Feed Roller ⑥ changes the tension on the elastic.

To adjust, loosen Nut ⑦ and turn Adjusting Screw ⑧.

For more feeding, decrease the tension.

For less feeding, increase the tension.

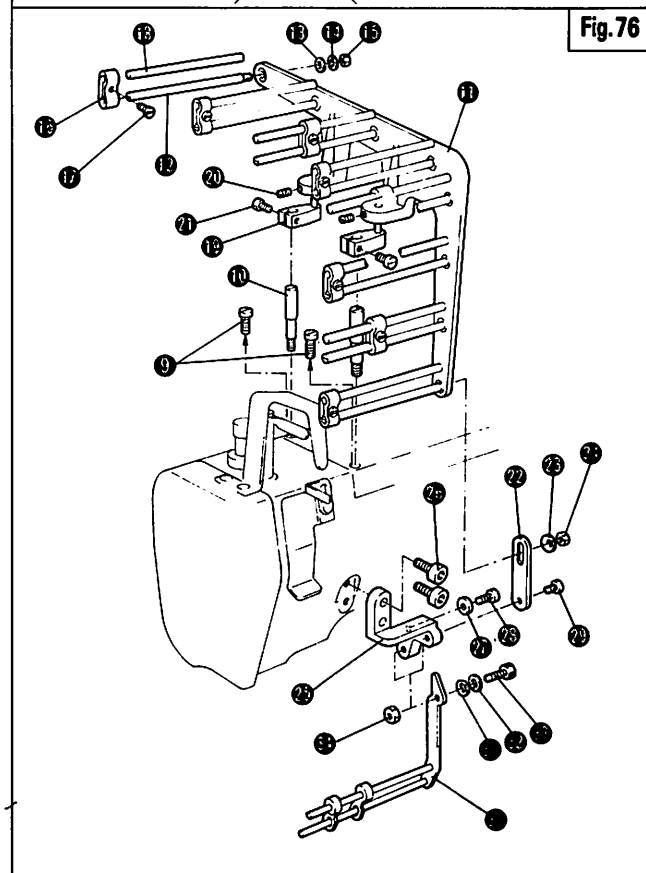
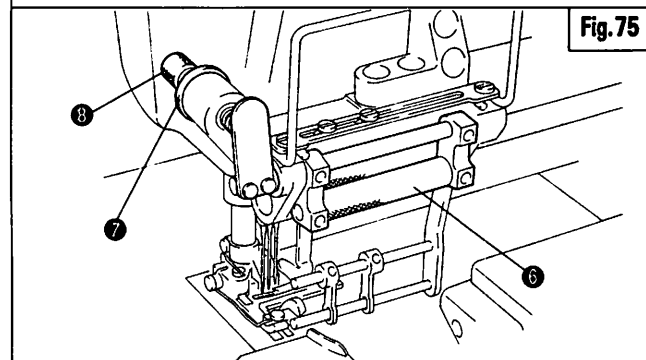
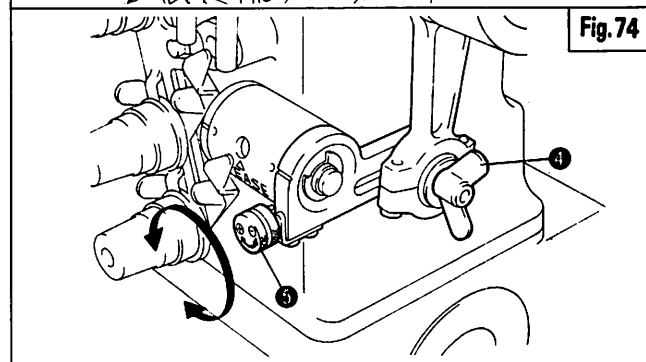
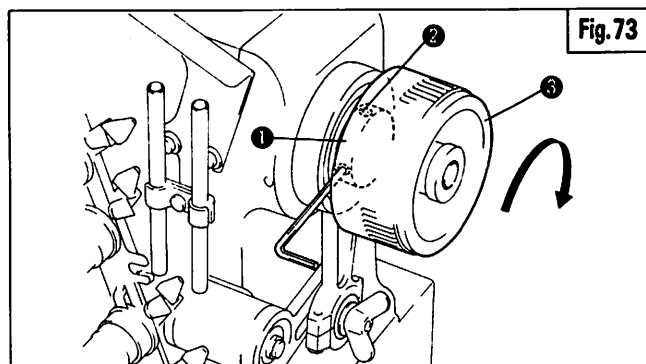
LACE GUIDE (LG210)

The lace guide helps to control the flow of lace. If the lace tends to flow irregularly, pass it through many guide pins.

If the lace is easy-to flow, pass it through less guide pins.

SETTING LACE GUIDE

Remove Screws ⑨ and set the lace guide ⑩~⑳ in sequence.



SETTING TAPE BINDER

Refer to Fig.77 and set Tape Binder ④ for W562-02 (W542-02).

1. Attach Bracket ① on the front cover with Screws ②.
2. Attach Bracket ③ on Binder ④ with Screws ⑤.
3. Insert Binder ④ into Bracket ①. Set Binder ④ in a correct height with Screw ⑥.

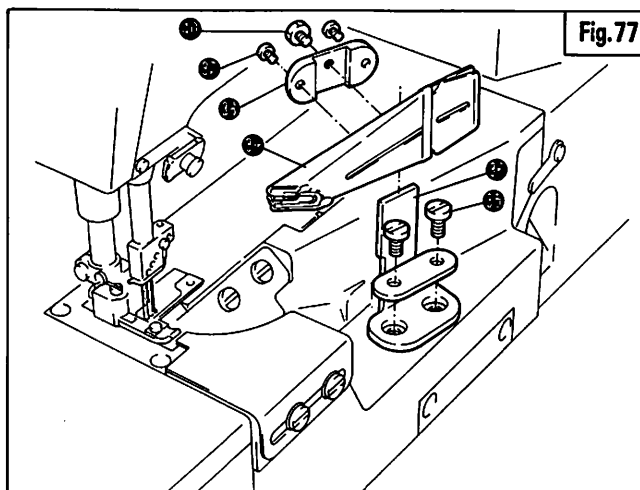


Fig.77

CHANGING THE MAXIMUM FEED RATIO

W562-01, -02, -03, -06, -07

W542-01, -02, -03, -06, -07

In these subclasses, the maximum feed ratio (1:0.7–1:1.3 in standard) can be changed to the special one (1:0.7–1:2).

Refer to Fig.78. Loosen Screw ① and widen the moving range of Lever ②.

Note:

Be sure that the feed dog does not hit the needle plate when making this adjustment.

Note:

When using the machine under the special feed ratio, the stitch length should be 3.2mm or shorter.

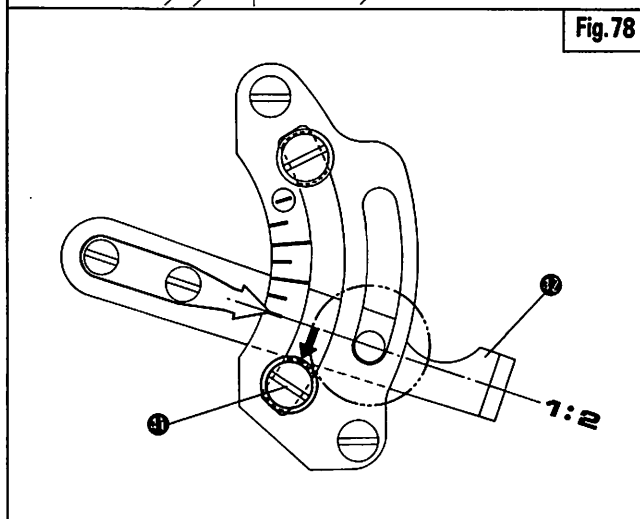


Fig.78

REPLACING TIMING BELT

There are three types of timing belt. Each type is marked with B, C or D. So, use the belt of the same mark when replacing.

On the part A of the machine arm, the figure (1) or (2) is marked.

Each shows the distance between the arm shaft and the crankshaft.

The relationship between this figure and the timing belt mark is shown on Table 8.

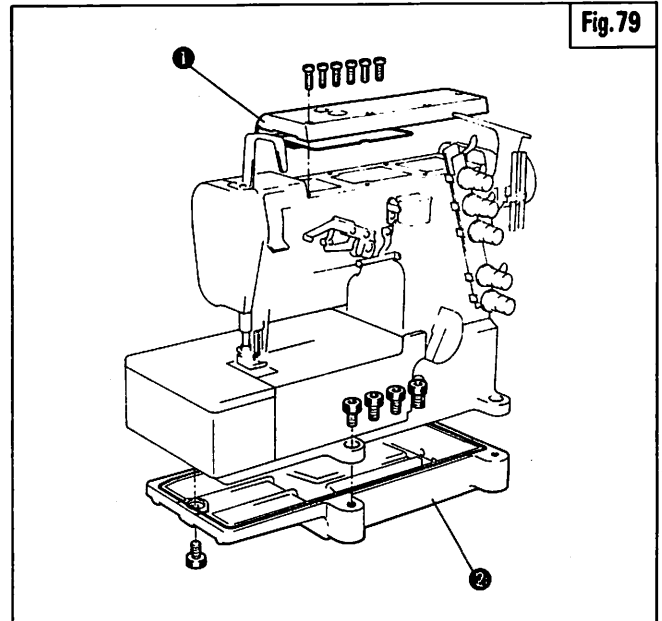


Fig. 79

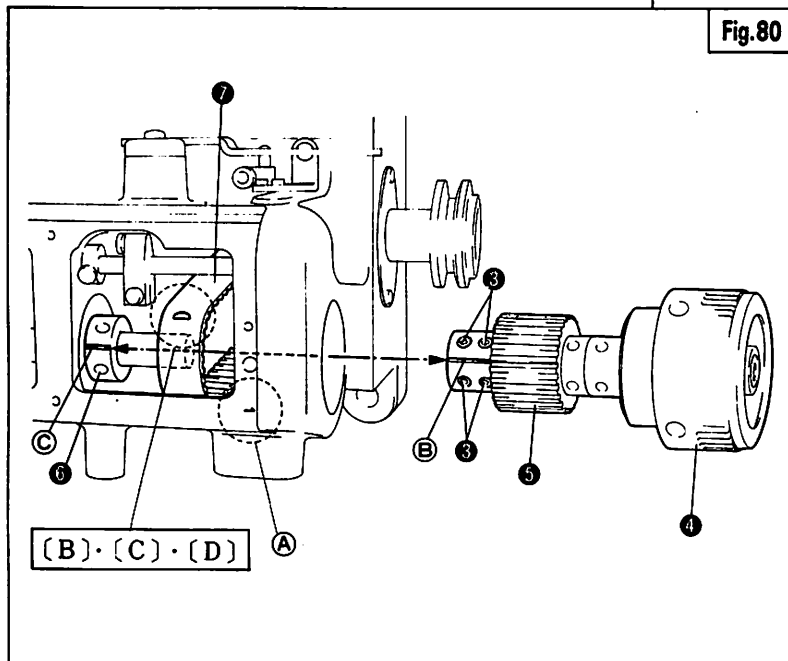


Fig. 80

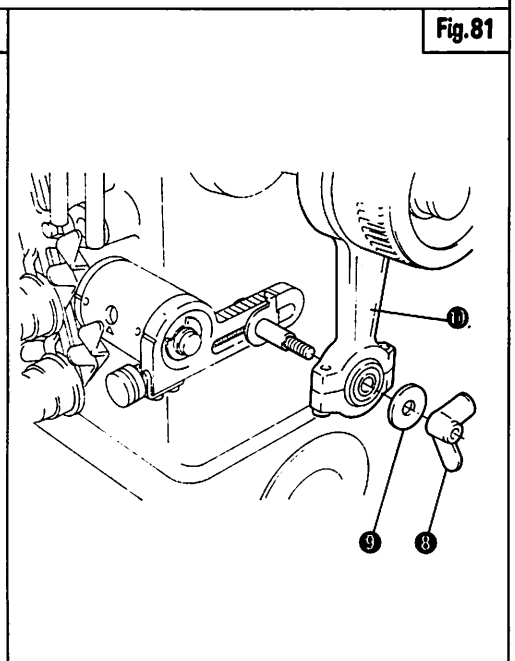


Fig. 81

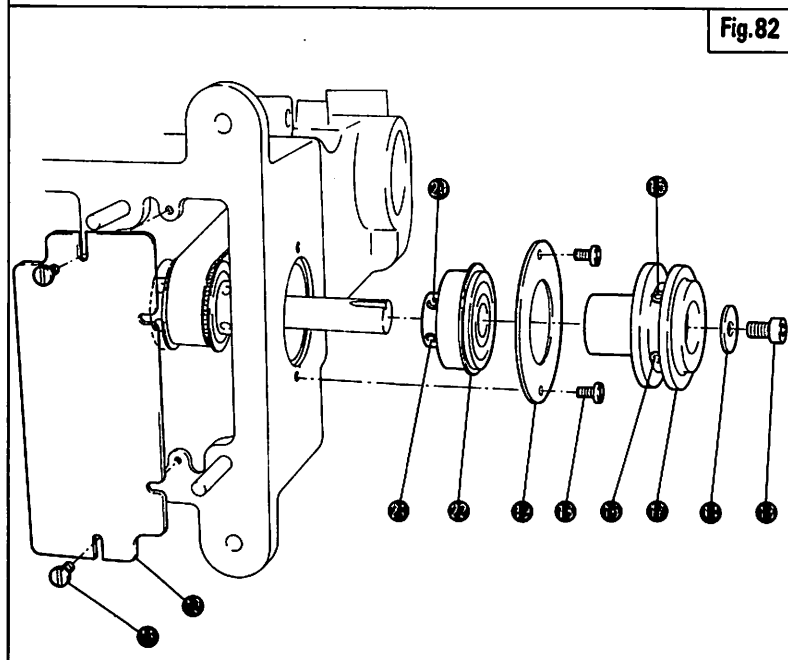


Fig. 82

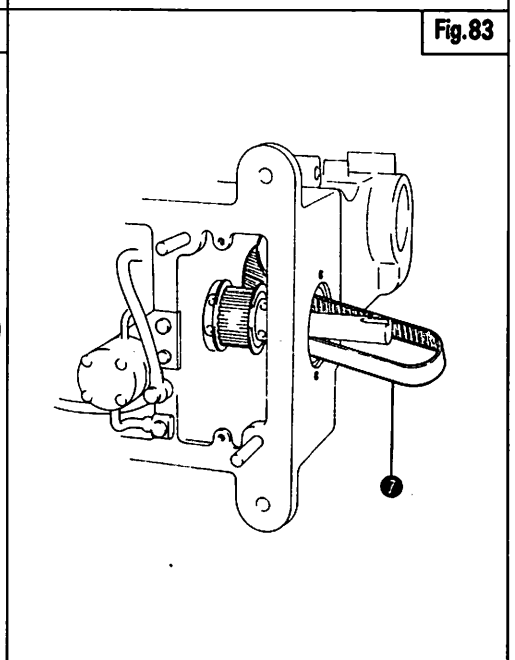


Fig. 83

Removing timing belt

1. Refer to Fig.79 and remove Arm Top Cover ① and Oil Reservoir ②.
2. Refer to Fig.80. Loosen four Screws ③, draw out Handwheel ④ to the right while turning it slowly.

Note:

For the machine equipped with the metering device, refer to Fig.81. Remove Nut ⑧ and Washer ⑨. Draw out Handwheel ④ with Connection ⑩ fitted.

3. Refer to Fig.82. Remove Cover ⑫, Pulley ⑬, Set Plate ⑭, Bearing ⑮ in sequence of ①~②.

Note:

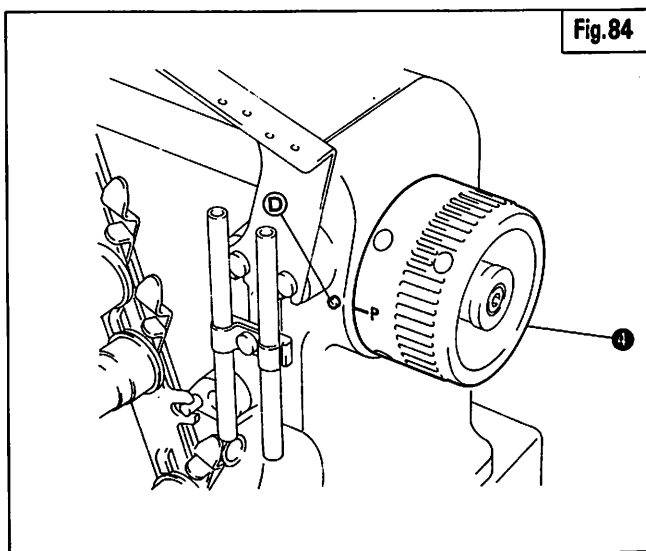
Do not remove Screws ⑰⑱⑲⑲ but loosen them.
Loosen Screw ⑲ until it is out of the positioning hole in the crankshaft.

4. Refer to Fig.83 and remove Timing Belt ⑦.

RELATIONSHIP BETWEEN THE MARK ON THE MACHINE ARM AND THE MARK ON THE TIMING BELT

Table 8

The mark on the machine arm	The mark on the timing belt
1	B or C
2	C or D



Replacing timing belt

1. Refer to Figs.82, 83. Replace Timing Belt ⑦, Bearing ⑮, Set Plate ⑭, Pulley ⑬, Cover ⑫ in the reverse way of removing.

Note:

- When fixing Bearing ⑮, be sure to Screw ⑲ set in the positioning hole of the crankshaft.
- Re-tighten Screws ⑰ and ⑱ after Screw ⑲ is tightened.

2. Turn Pulley ⑬ and bring the looper to the right dead point. Move the needle bar to the lowest position by hand.
3. Keeping the above conditions, align the mark ⑤ of Belt Gear (Upper) ⑤ with the mark ⑥ of Bearing ⑥. Tighten one of Screws ③ tentatively. Place the edge of Timing Belt ⑦ on Gear ⑤ and turn Handwheel ④, then Timing Belt ⑦ will be in position. Tighten four Screws ③.

Note:

- In the case of the machine equipped with the metering device, replace Nut ⑧, Washer ⑨, and Connection ⑩.
Be sure to keep the marks ⑤ and ⑥ aligned.
- If they are not aligned, the synchronization of the needle bar and the looper is out of order.

4. Turn Handwheel ④ and make sure that the looper starts to move to the left from its right dead point as the needle bar starts to rise from its lowest position.
5. Make sure that the mark ⑤ on Handwheel ④ faces to the mark ⑥ when the needle bar is in its highest position.
6. Refer to Fig.79. Replace Arm Top Cover ① and Oil Reservoir ②.